

1. Introduction

1.1 The Government has decided that, subject to legislative approval, a Census of Population should be taken throughout the United Kingdom in 2001; the proposed date is Sunday 29 April. The Census will be the twentieth in a series carried out every 10 years in Great Britain since 1801, except in 1941, and the eighteenth to be carried out in Northern Ireland.

1.2 The 2001 Censuses in the United Kingdom (UK) are carried out by three Census Offices - the Office for National Statistics, the General Register Office for Scotland and the Northern Ireland Statistics and Research Agency.

1.3 The Census Offices are entering an important stage of the Programme for the 2001 Census. Many aspects of the research phase have concluded, major contracts have been let to handle some key processes and final development of all systems and procedures is well underway. The 2001 Programme will be taken forward with the Census Rehearsal, to be conducted on April 25th 1999. This will simulate and finally test all aspects prior to live running in 2001.

1.4 This paper is the fifth in a series of annual information papers describing the work being carried out towards the 2001 Census. It covers the background, explains the approach being taken to ensure that objectives are being met, underlines the critical nature of timing, illustrates the changes which will have to be made and also gives details of the involvement of census users. Six main sections follow this Introduction:

- Background.
- The need for census information.
- Delivering 2001 Census Objectives.
- Improvements in performance and cost-effectiveness.
- Timetable.
- The role of consultation.

1.5 In addition, there are seven annexes covering:

- A 2001 Census strategic aims, planning assumptions, and measures of success.
- B 2001 Census - Key strategic milestones.
- C Summary of progress.
- D Consultation.
- E 1997 Census Test Evaluation.
- F Census Rehearsal.
- G Proposed topics to be covered by the 2001 Census.

2. Background

2.1 A census is taken by the Registrars General, with the approval of Parliament, under the Census Act 1920 (England, Wales and Scotland) and Census Act (Northern Ireland) 1969. The Census Acts permit a census to be taken at any time five or more years after the previous one. In GB, there has been a census every ten years in the series begun in 1801 (except that war prevented a census in 1941, and there was an additional mid-decade census in 1966), with the most recent in 1991. Since 1926, censuses have been separately conducted in Northern Ireland as opposed to Ireland as a whole.

2.2 Under the current terms of census legislation, the Registrar General for Scotland is responsible for taking the Census in Scotland. As a result of devolution it will be for the new Scottish Parliament to approve separate secondary legislation relating to the specific arrangements for the Census in Scotland. The necessary subordinate legislation relating to the arrangements for the Census in Northern Ireland will be made by the local administration. However authority for conducting the Census in Wales is not, under the terms of the Government in Wales Act 1998, devolved to the National Assembly for Wales, and the UK Parliament in Westminster will continue to approve the arrangements in both England and Wales.

3. The need for census information

2.3 The Government announced in October 1992 that planning would proceed on the assumption that the next census would be held in 2001, and this gave the Census Offices a remit to carry out the preparatory work. This decision followed a UK wide review which confirmed that there would be a continuing need in both the public and private sectors for the type of information provided by the census and that there were no alternative sources.

2.4 As part of the Government's 1997 Comprehensive Spending Review of all Government Departments, the three Census Offices submitted Business cases to support their bids for funds. Following the Review, plans for the 2001 Census were endorsed and all three Census Offices received three year funding settlements which allowed work to continue.

2.5 The development programme for the 2001 Census began in 1993-94 and following a detailed research and development phase, a number of methodological changes were trialled in a major public test in June 1997. The final Census design will be tested in the Census Rehearsal in 1999. The programme is built around four strategic aims:

- to ensure that the question content is appropriate to meet the demonstrated requirements of users;
- to deliver products and services to meet legal obligations and users' needs within stated quality standards and to a pre-defined timetable;
- to ensure that all aspects of the census data collection operation, and the dissemination of results, are acceptable to the public and comply with Data Protection law;
- to demonstrate that the census represents value for money.

2.6 To help guide the programme, the strategic aims are supplemented by sets of planning objectives and assumptions, derived from consultation with users, census respondents and through discussion between the three Census Offices (Annex A). These objectives have evolved as planning has proceeded, and together with the assumptions, have been developed and built into a full specification for the 2001 Census as the research programme has unfolded. Input from census users has played, and will continue to play, a key part in this work.

3.1 In 1992 the three UK Census Offices undertook a Census Policy Evaluation and Reappraisal (PEAR). This was a review of future needs for statistical information on population and housing over the period 1996-2016 and of the options for providing the information. The review confirmed a continuing need for the type of information provided by the census to support planning, policy decisions and resource allocations. It also confirmed that a conventional census remained the primary means of providing such information on a country wide standard basis for local areas. On publication of the findings of the review in October 1992, the Government announced that planning would proceed on the assumption that the next census would be held in 2001.

3.2 The early assessment of user requirements for 2001 was supported by findings from major surveys, which took place concurrently in England and Wales, Scotland, and Northern Ireland during 1994. Whilst the main focus of the surveys was on 1991 performance, the opportunity was taken to look forward to the next census and the forms of output required. Nearly 1000 users took part in the exercise, which started with the issue of a questionnaire and was followed by local meetings. Similar key needs to those recognised during the PEAR were identified.

3.3 Consultation on user requirements continues to play a key role in shaping the Census through the Groups described in section 7. Initial consultation considered the requirement for each topic against an agreed set of criteria in order to identify topics or questions for inclusion.

3.4 The second stage of consultation involved the production and assessment of business cases for each possible question. Some topics are so fundamental that without them a census could not be taken and no case is required. These are:

- the count of the number of households; and
- the count of the number of people, classified by sex and age (through asking date of birth).

3.5 All other topics were subject to a rigorous assessment and business cases were produced both for the question and for the categories to be included. These cases established the way the information would be used, the impact on users if the information was not available from the Census and whether the information

was required for legal purposes. The cases were completed in May 1998 and were approved by the United Kingdom Census Committee (the forum which co-ordinates census planning and development between the constituent countries of the UK) in July 1998. Information from these cases was used to develop the Government's proposals for the 2001 Census for inclusion in a White Paper.

3.6 The White Paper (*The 2001 Census of population Cm 4253*) published in 1999 sets out the Government's proposals for the Census in the United Kingdom and publication is timed to ensure that sufficient time is allowed for public discussion of proposals that affect every person in the country. The proposals permit the necessary degree of harmonisation required across the United Kingdom and also provide the basis for the censuses to be carried out efficiently while acknowledging differences in approach, where appropriate, following the systematic consultations that have taken place about the Census in Scotland and Northern Ireland.

The White Paper is structured as follows:

- Introduction
- Consultation and Census Tests
- Population and Topics to be covered by the Census
- Confidentiality and computer security
- The Conduct of the Census
- The Results of the Census
- The Parliamentary Process

A summary of proposed topics to be included in the 2001 Census is included at Annex G. The final decision on topic content will be taken by the appropriate Parliament.

3.7 European Union (EU) needs for population and housing data from its Member States will be met by the UK from the 2001 Censuses. The EU Statistical Programme Committee, at its meeting in Luxembourg on 26th and 27th November 1997, agreed to a set of "Guidelines" with the objective of harmonising and synchronising the collection of data. Although the EU Guidelines will have no legally binding force, the UK see few problems in conforming to them. The Guidelines set out the content and timing of statistical output to be supplied to Eurostat.

3.8 The UK will also conform, as far as possible, with any statistical requirements identified by the United Nations (UN) in the set of principles and recommendations for the next round of censuses throughout the world. All countries will be asked to produce a set of core tables, which will be incorporated into a future UN demographic publication. In addition, recommendations have been produced by UN Regional Commissions and the UN Economic Commission for Europe has worked jointly with Eurostat to produce a set of proposals, which were endorsed by the Conference of European Statisticians in May 1998.

4. Delivering 2001 Census objectives

4.1 The key requirement of the census is to produce statistical information that meets users' needs, and give the best possible value from the large investment in the Census. 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.

4.2 There are two particular reasons why 1991 methods cannot simply be re-used for 2001. Firstly, social and behavioural factors that affect the census are changing. For example, there are 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 methods to collect census forms and for changes in the way census topics are chosen and the questions worded.

4.3 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 and better ways of capturing and coding the data. This should enable the aim of processing all responses to all questions to be achieved (in the 1991 Census responses to certain questions were coded and analysed for only a 10% sample), and offer better ways of disseminating census results.

4.4 Although every effort will be made to achieve high levels of coverage in the Census, it is recognised that some degree of under-enumeration will be unavoidable. Research is being carried out into methodologies which might be used to produce a One Number Census in which all Census outputs would be corrected for estimated under-enumeration and would sum to one total - the "one number", consistent with the national estimate of the population in 2001. This would be a major departure from previous censuses where the publication of preliminary, then final census counts was followed some time later by the release of a limited series of coverage correction factors. This is an ambitious project involving the development of improved methods for undertaking a Census Coverage Survey (with a significantly different design to the Census Validation Survey in 1991), as well as using data from administrative sources and from demographic analysis. Ways of statistically modelling the estimated under-enumeration for detailed outputs are being explored.

4.5 In summary, the programme will clearly identify, test and evaluate all the methodologies and procedures needed for 2001. Results from the Census Test conducted in 1997 and the Census Rehearsal to commence in 1999 will provide information essential to decision making in this process.

5. Improvements in performance and cost-effectiveness

5.1 The 2001 Census programme aims to ensure that users' needs are identified and met, that the performance and cost-effectiveness of the Census is maximised and that wherever possible, savings are made compared with the cost of equivalent parts of the 1991 Census. The programme also aims to keep total spending in a 2001 Census to a minimum commensurate with achieving the output of statistical information required.

5.2 Scope for improved performance and greater overall benefit from tax payers' investment in the Census can be categorised broadly as:

- reducing development costs for the computer systems - by identifying and using technological and methodological opportunities, and through them establishing more efficient and flexible means of developing processing systems;

- reducing operational costs - by effective development and implementation of improved systems, resulting in fewer field and processing staff;
- identifying the scope for joint ventures and entering into partnerships wherever appropriate;
- producing better value products - by improved quality, coverage and more flexible methods for delivery of results;
- widening the customer base - through more effective promotion and marketing, use of joint ventures; and
- increased dissemination - resulting from improvements in products and widening of the customer base.

5.3 As part of the development and testing programme, consultants were employed in November 1994 to consider where work might be done by the private sector to achieve efficiency savings, without risk to the Census. The study reviewed the major census activities and recommended a short list of potential activities for outsourcing.

5.4 The study was quick to recognise the complexity of the Census and its vulnerability to many threats, particularly the sensitivity of public perception and the risk to quality. It also recognised the very tight timetables, both in the Field operation and in the delivery of outputs to customers, with limited opportunity to implement contingency plans. Only those activities which could be clearly specified and tightly managed, which did not require census expertise, and which would be of interest to a number of potential suppliers were selected for further consideration. The study subsequently assessed the risk of outsourcing these selected activities and the potential net savings by using the private sector. Only those that were low risk, where the risk could be managed by increased contract management and where the savings were significant, were selected as potential outsourcing candidates.

5.5 The study recommended that worthwhile savings might be made from outsourcing three work areas:-

- supply and payment of enumerators;
- the capture of census data in electronic format and the coding of non-numeric data; and
- the provision of computer services.

5.6 Research suggested that outsourcing enumerator recruitment could greatly increase costs and this together with concern from users that there might be a risk to data quality resulted in the first activity being reduced to “payment” only. Successful outsourcing of the Enumerator Payroll for the 1997 Test resulted in the same approach being adopted for the 2001 Census and a contract has been awarded to Chessington Computer Services.

5.7 Following the successful trial of scanning, optical character recognition and automatic coding in the 1997 Test, further examination of the potential for private sector involvement resulted in the initiation of an Open Options Procurement (OOP) project to secure a service for the core activity of scanning to create digital images and character recognition. The OOP approach offered a flexible solution, by encouraging potential service providers to address our core requirement but also to consider the opportunities for providing services in other areas. Three potential suppliers were shortlisted and following evaluation a contract was awarded to Lockheed Martin. The contract covers the printing of scannable forms, receipt of forms, scanning, data capture and coding through to the provision of data and images for subsequent processing. The contractor will be responsible for providing these services for the Census Rehearsal and the 2001 Census.

5.8 Contracts have also been awarded for:

- The printing of all census materials other than scannable forms - to Central Office of Information; and
- Collection and distribution services - to TNT
- The Public Telephone help-line for the Census Rehearsal – to Cable and Wireless.

6. Timetable

6.1 As the date for the Census is set by legislation and many of the activities are time-critical, a key element in the programme is a timetable, which will ensure that opportunities for savings and improved performance are not missed. The key dates in Annex B highlight the milestones along the route to the Census in 2001.

6.2 Parliamentary involvement imposes a timetable on census preparations. The Order and Regulations necessary under the Census Acts must be made well before the census to allow, for example, for the 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 in advance of Parliamentary debates.

6.3 The testing of methods and procedures, and the development of prototypes are important elements of the 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 to measure the overall burden on the public of alternative question sets and questionnaire designs.

6.4 A significant milestone was reached in 1997 when Census Tests were conducted by the Census Offices. The main aims of the tests were 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.

6.5 The results of the 1997 Tests (see Annex E) and other small-scale tests will largely determine the way in which the 2001 Census is conducted and processed. The conclusions reached have helped to inform the content of the Government White Paper. There will be a rehearsal (see Annex F) starting this year which will simulate all proposed 2001 Census field operations and allow a full trial of all processing prior to live running.

7. The role of consultation

7.1 An essential part of shaping plans for any census is user consultation, and the Census Offices are continuing to build on the experience gained in the 1991 Census by involving users in planning the 2001 operation through the various Census Advisory Groups.

7.2 The Advisory Groups, and the user community whose interests they represent, are:

- Departmental Working Group (DWG)
 - Central government users
 - Chair: Andy Teague (ONS)
- Central and Local Government Intelligence Partnership (CLIP):
 - Local government users
 - Chair: Graham Jones (ONS)
- Health Service Advisory Group (HSAG)
 - National Health Service users
 - Chair: Alex Clark (ONS)
- Academic Advisory Group (AAG)
 - Academic community users
 - Chair: Alex Clark (ONS)
- Business Advisory Group (BAG)
 - Private sector users
 - Chair: Alex Clark (ONS)
- ONS Census Advisory Group (OCAG)
 - ONS users
 - Chair: Andy Teague (ONS)
- Scottish Census Advisory Group (SCAG)
 - Scottish users
 - Chair: David Orr (GRO(S))
- Northern Ireland Statistics Advisory Committee:
Northern Ireland Census Advisory Group:
 - Northern Ireland Census users
 - Chair: Norman Caven (NISRA)

7.3 Each Group meets up to three times a year, the timing of each aspect of consultation being determined by the demands of on-going development. In 1998/99 the consultation has focused on:

- one number census;
- population bases;
- remaining aspects of small-scale testing;
- output strategy; and
- results of the 1997 Census Test

A wide range of consultative papers was presented to the Census Advisory Groups:

1997 Test Evaluation Report
2001 Census progress on small scale testing
One Number Census
Household definition
2001 Output Strategy
Output consultation with users
Consultation arrangements
Draft White Paper: summary of contents

Lists of user contact points for the various groups and copies of papers are available from Margaret Wort on 01329 813344.

7.4 Working Groups have also provided a useful forum for discussion on a range of topics. The Groups comprising representatives from the Advisory Groups are concerned with:

- Census content, question testing, classifications and coding;
- Data collection, including methods, coverage and population bases; and
- Output, including geography, confidentiality and media.

7.5 Most of the work undertaken by these working groups has been subsumed into the Advisory groups programme and only the Output Working Group still meets. The groups have made a valuable contribution towards planning for 2001 Census. Annex D reports on the work carried out during 1998-99 and summarises consultation plans for the remainder of 1999.

7.6 In Northern Ireland, the Census Office in the Northern Ireland Statistics and Research Agency contributes as necessary to the work of the Advisory Groups and ensures that through the appropriate consultative arrangements, user requirements are properly addressed in Northern Ireland. Meetings of the Northern Ireland Census Advisory Group, which includes representatives from the business community, academia and voluntary sector, have continued to take place regularly

7.7 News of the consultation programme and progress will continue to be reported in *Census News*. Users wishing to be included on the mailing list should telephone 01329 813800, or users in Scotland should telephone 0131 314 4254.

Census Offices

Annex A 2001 Census Strategic aims, Planning assumptions, Measures of success

1. Having evaluated the 1991 Census and held a series of debriefing workshops with census users, the Census Offices have adopted a set of high-level strategic aims and planning objectives for the 2001 Census, designed to meet customers' requirements.

1.1 Strategic aim 1 - Content

To ensure that the question content is appropriate to meet the demonstrated requirements of users.

Planning objectives

- Improve consultation at all stages with existing and potential users to gain views from all customer sectors. - *ongoing*
- Ensure that topics and question designs will not be left out because of insufficient development and produce business cases to justify the inclusion of topics. - *completed*
- Research and test question and questionnaire design through focus groups, cognitive research, small scale surveys and large scale census tests. - *completed*
- Publish White Paper to further consultation. – *planned March 1999*

Measurement/Indicators of success

- Question content meets customers' needs

1.2 Strategic aim 2 - Results

To deliver products and services to meet legal obligations and users' needs within stated quality standards and to a pre-defined timetable.

Planning objectives

- Full Consultation at all stages. - *ongoing*
- Publish data quality objectives on coverage, data cleaning, imputation and output.- *ongoing*
- Process 100 per cent of responses to questions.- *included in current plans*

- Achieve accurate counts of populations and their characteristics, which are comparable between areas across the UK. - *part of One Number Census work*
- Provide standard output to convey the main national, regional and local results of the Census and better facilities for customised outputs. - *to be discussed at 1999 User Consultation Roadshows*
- Adopt measures to minimise or redress differential and total undercoverage. - *part of One Number Census work*
- Develop quality measures and targets as well as involving customers in the quality assurance of products. - *ongoing*
- Publish timetables and timescale of delivery.- *in future plans*
- Enable output to be updated after the 2001 Census to provide estimates until further statistics are available. - *in future plans*

Measurement/Indicators of success

- Results represent sufficiently full and accurate counts of populations and their characteristics.
- Products supplied to timetable, at advertised cost and free from errors.
- Statistics for small and local populations with cross-analyses to be available, with comparability between areas and over time.
- European Community and United Nations population and housing statistical requirements met.
- Output and access compatible with current industry standards.

1.3 Strategic aim 3 - Confidentiality

To ensure that all aspects of the census data collection operation and the dissemination of results are acceptable to the public and comply with Data Protection Law.

Planning objectives

- Keep completed forms and other records containing personal information secure and confidential. - *ongoing*
- Ensure staff are trained in internal security and confidentiality procedures. - *ongoing*
- Organise independent review(s) of arrangements to assure security and confidentiality, with published results. - *planned for 1999*
- Promote confidentiality to the public through both a publicity campaign and liaising with community groups. - *started*
- Use disclosure control methods for aggregated and microdata to protect confidentiality. - *ongoing*

Measurement/Indicators of success

- Confidentiality and security arrangements upheld by independent review(s).
- No successful challenges made by the Data Protection Register.
- After investigation, complaints about the conduct of the census and the use of data are proved to be unsubstantiated.

1.4 Strategic aim 4 - Value for money

To demonstrate that the census represents value for money.

Planning objectives

- Begin planning earlier than in 1991, to minimise the risk. - *completed*
- Concentrate research resources in areas where improvements are essential and will be most beneficial. - *completed*

- Test new methods and procedures thoroughly to minimise the risk to the operation. - *completed for major elements*
- Capture data more cost effectively. - *work outsourced*
- Use efficient, speedy and reliable processing systems, no more complex than necessary. - *ongoing*
- Contract out appropriate parts of the operation when cost effective to do so and within the constraints of confidentiality. - *elements outsourced*
- Maximise income through an effective charging policy as well as conditions of sale and other business agreements which uphold Crown Copyright. - *ongoing*
- Widen customer base through effective promotions, marketing and the use of joint ventures. - *ongoing*
- Provide business cases to support all major financial commitments. - *ongoing*
- Establish quality systems to control the management of risk and change. - *ongoing*

Measurement/Indicators of success

- Costings included in the White Paper not exceeded.
- 100% of data from the public processed.
- Total cost of Census no greater than 1991, allowing for increased number of households and questions as well as 100% processing of questions and the One Number Census methodologies.
- GB cost per capita and percentage of GDP compares favourably with USA, Australia and Canada.
- Greater proportion of income generated than in 1991, income targets met for each year, and customer numbers increased.
- Business case agreed for all major financial decisions.
- Management practices and operational procedures upheld by an independent audit.

Annex B 2001 Census - Key strategic milestones

1993	Statistical Policy - set standards Agree Testing strategy and programme
1994	Agree territorial scope within UK Hold initial discussions on EU Requirements
1995	Start Small scale testing programme Agree key IT milestones and dates for defining IT strategy for 2001
1996	
July	Announce 1997 Census Test
September	Agree question set for 1997 Census test
October	Confirm date for 1997 Census Test
1997	
March	Set Legal Basis - including EC Requirements
June 15	1997 Census Test day
1998	
April	Prepare the strategy for Data Processing Agree output strategy
June	Prepare outline specifications for Data Collection Agree topics for census questions
August	Announce Census Rehearsal
December	Let contract for Data Capture
1999	
March	Publish proposals for 2001 Census (White Paper)
April 25	Census Rehearsal Day
June	Complete Census Quality Survey
End	Finalise Data Collection procedures Lay Census Orders
2000	
Early	Census Rehearsal (Processing) Make Census Regulations
April 2001	Census Day Complete Census Enumeration Carry out Census Coverage Survey
2002	Complete Data Processing
Produce results to pre-defined timetables – dates to be agreed	

Annex C Summary of progress

1. The following milestones in Annex B were passed by the end of November 1998.

- **1993: Statistical Policy** – A set of main aims and objectives was produced and has been used to define policy and set standards.
- **1993: Agree testing strategy and programme** - A decision was taken to conduct major Census tests in 1997, a Census Rehearsal in 1999 and a small scale testing programme was devised.
- **1994: Agree territorial scope** - Plans have been made on an UK basis and the Census Offices have agreed terms of reference for an UK Steering Committee. It was agreed to share costs of the development programme and to make decisions on the degree of integration at the appropriate point in the timetable. Work on EU requirements did not start until 1995, but is not expected to impact on the planned programme.
- **1995: Start small scale testing programme covering a number of new and revised questions** - The first wording test was carried out in October 1995. A large number of small scale tests have been carried out between end of 1995 and Summer 1998.
- **1995: Agree IT milestones and dates for defining IT strategy for 2001** - An IT review was carried out by an internal team with consultancy support. Key milestones and decisions recognised have been carried forward into individual plans for the projects comprising the 2001 Census programme.
- **1996: Announce 1997 Census Test** - In July News Releases for each of the three Census Offices announced that the Test was planned for April 1997. The Release listed the areas included, described the size of the Test and the main aims. It also emphasised the voluntary nature of the Test and that all information would be treated confidentially. Brief details were given on the recruitment of Field Staff.
- **1996: Agree Question set for 1997 Test** - The questions to be included in the 1997 Test were decided.
- **1996: Confirm date for 1997 Test** - In November, News Releases for each of the three Census Offices announced the Questions to be included in the 1997 Test and also announced the delay of the Test from April to June.
- **1997: Set Legal Basis, including EC Requirements** - initially planned for 1996 the milestone was deferred until 1997. In March 1997, as a result of widespread objections to the proposal for an EU Regulation, the EU Statistical Programme Committee adopted a set of “Guidelines” and discussions on the content of statistical output is underway.
- **1997: Census Test Day (15th June 1997)** - Test conducted covering 79,000 households in England, 19,000 households in Scotland and a further 9,400 households in Northern Ireland. Further detail is reported in Annex E.
- **1998: Prepare the strategy for Data Processing** – Automatic data capture and coding technology was successfully trialled in the 1997 Test. Scanning; optical mark reading (OMR) and optical character recognition (OCR) techniques; and automatic and computer assisted coding of write-in responses will be used to improve the efficiency and cost-effectiveness of processing census data. A strategy was developed which will remove the paper form from processing once an electronic image is captured. A service provider was sought through an Open Options Procurement and a contract for the processing of the Rehearsal and 2001 Census was awarded to Lockheed Martin in December 1998.
- **1998: Agree Output Strategy** - In March, the overall plan for disseminating output was agreed. In contrast to previous censuses, it was decided that the main national and local results would be released concurrently. Technological advances will be reflected in the electronic products available and the user will have access to the results, either in a standard or specially commissioned format. The provision of statistical abstracts will be improved and the service for commissioned outputs will be cost effective and punctual.

- **1998: Prepare outline specifications for Data Collection** – Following evaluation of results from the 1997 Test the enumeration methods and form style have been agreed. A postback methodology and ‘page per person’ style form have been adopted to make best use of enumerator resource and reduce the burden on the public.
- **1998: - Agree topics for census questions** – Topics proposed for inclusion in the White Paper.
- **1998:-Announce Census Rehearsal in Great Britain** - A Press Release in August announced that the Census Rehearsal would be held on 25th April 1999. All three Census Offices will be involved in the management and conduct of the rehearsal, which will be a pilot for the 2001 Census operation. The Census Rehearsal will provide final verification that the questions, topics, form design and the enumeration procedures are acceptable to the public. The processing systems and output production will also be rehearsed. The Rehearsal will provide staff in the Census Offices with invaluable experience of a census operation albeit on a smaller scale.

2. 1997-98 programme outputs

2.1 The fourth version of the 2001 Census Information Paper was issued in October 1997.

2.2 Evaluation on all aspects of the 1997 Census Test has been completed. Reports have been written on the results, and conclusions fed into the White Paper. A high level report was issued to Census Advisory Groups.

2.3 Each Census Office underwent a scrutiny of its finances as part of the Government’s Comprehensive Spending Review. This contained initial estimates for funding required for the 2001 Census, focusing on the years 1999-2001. A settlement was agreed for the 2001 Census for three years. Funding beyond 2001 will be subject to further spending reviews.

2.4 The questions proposed for the 2001 Census were supported by ‘business cases’ from users. The recommendations were reached after assessing the topics against five different criteria, which ensured that there was not only a strong case for the inclusion of selected topics but that the information was not available from any other source. The questions had to be as comprehensible as possible whilst keeping the burden on the public to a minimum. Additionally the information requested had to be acceptable to the public so that it did not prove a risk to the Census as a whole while also ensuring that the questions could be answered with sufficient accuracy to meet customer needs.

2.5 The Census Offices sought ministerial endorsement for the 2001 Census. Cases were written to provide background to the Census, justify the need, outline the intended programme and provide estimates of costs for conducting a Census in 2001. The Cases were accepted and supported provided that IT, private sector involvement and the use of charging was maximised and the overall costs of the Census were contained within the funding settlement made in the Comprehensive Spending Review.

2.6 Research into optimising coverage of the 2001 Census continued with the publication of the ‘One Number Census’ consultation paper. The One Number Census methodology will be trialled in the Rehearsal before a decision is taken with respect to 2001.

2.7 Three major procurements of Census activities were advertised in December in the Official Journal of the European Community. The areas offered for outsourcing were Census processing; Field staff payroll as well as printing, distribution and secure collection of completed forms. The contracts for all these services were awarded towards the end of 1998.

Annex D Consultation

1. Work undertaken by the Working Groups to the end of December 1998

1.1 The Content Working Group

The Group has played a major role in reviewing the proposals for new and changed questions in the 2001 Census, and in selecting for testing those topics and questions, for which the need for information from the census is the strongest. On a number of topics, sub-groups were set up to bring in a wider range of views. Based on this consultation, the Census Offices started testing possible topics and questions in Spring 1995, and the programme of research into how the public perceive and respond to alternative census questions and designs of the census form continued through to September 1998. Draft business cases for census questions were prepared with assistance from the Working Group, and sent to all Local and Health Authorities for comment in Autumn 1997. The final versions of the business cases were ready for assessment by spring 1998.

1.2 The Data Collection and the Population Bases Working Group

The Group made a number of recommendations, which were supported by the main advisory groups and accepted by the Census Offices. These have been mainly concerned with the treatment of various subgroups of the population within an overall *resident* population base that is, the 2001 Census should only count people where they usually live as opposed to where they are present on Census night. One major recommended change is to classify students as resident at their term-time address. This should be easier if the Census is held in term-time, as planned. The group also put forward a number of suggestions on how differential under-enumeration might be reduced, in particular to seek greater assistance from local authorities and community organisations. Some initial thoughts about measuring the coverage and quality of the Census were also considered by the group and are now being taken forward by the One Number Census project. Subsequent consultation, notably on the household definition and enumeration of special population subgroups has been carried out through the Advisory Groups.

1.3 The Output Working Group

The Group met four times last year to consider the paper *2001 Census: Output Strategy* and examine the

first proposals for Census Area Statistics and for topic based output. It also considered an initial view of the business and technical specification of potential products and saw demonstrations of potential software and systems, which might be used in providing output. A presentation of a prototype of an Output Area Production System (developed with the assistance of Dr. David Martin - University of Southampton), demonstrated that the creation of a new geography for output for England and Wales, based on the aggregation of postcodes, was feasible. Such a system would produce Output Areas on lines similar to those produced in Scotland for the 1991 Census and OWG gave approval for further work to examine specific technical problems in the system. Recent discussion at OWG also focused on the arrangements for the open consultation meetings to taking place early in 1999.

Detailed work has been taken forward in four special interest sub-groups on the following subjects:

- samples of anonymised records (led by Professor Angela Dale of the Census Microdata Unit, University of Manchester);
- output geography and area statistics (led by Chris Denham, ONS);
- dissemination methodology (led by Neil Lander Brinkley, ONS); and
- output with two geographies (led by Frank Thomas (GRO(S))).

Meetings of subgroups were convened to discuss issues or business was conducted by e-mail. Subgroups reported regularly to OWG. OWG has been kept informed of the progress of Professor Philip Rees (School of Geography, University of Leeds) in leading the ESRC-funded work of establishing the requirements of the academia from the 2001 Census.

During the next year, the work of the Group will focus on the detailed requirements of users, following the Consultation Meetings to be held in 1999. The outcome of the meetings will enable the design and creation of standard products, systems and commissioned output.

2. Consultation Plans January - December 1999

- In Spring 1999, consultation on output will take the form of roadshows, which will be held regionally throughout the United Kingdom. The roadshows will consult as many users and prospective users as possible on the form of output to be prepared following the 2001 Census. This will ensure that the outputs produced reflect the user requirements and will help strengthen the relationship between census users and the Census Offices. Questionnaires will be used to gather user views and requirements, which will be available to users who are not able to attend the meetings.

- In June the Output Working Group will consider draft proposals for area statistics, topic themes, workplace and migration statistics and the means of dissemination.
- In the Autumn there will be consultation papers on strategic decisions published in the White Paper, relating to the output strategy and the first proposals for area and topic statistics.
- Work will be taken forward primarily by Advisory and Working Groups but include wider user consultation wherever necessary. Up to date information on consultation plans will be announced in *Census News*.

Annex E 1997 Census Test Evaluation

1997 Census Test

The 1997 Census Test was the first major opportunity to test methodological and other changes on a larger scale. It was conducted on 15th June in over 97,000 households in Great Britain and 9,400 households in Northern Ireland. Although voluntary, the Test provided essential information on public reaction to new questions and form style as well as assessing the success of collection and processing methods.

The areas chosen for the Test contained a wide variety of housing types and socio-economic groups, providing a wide cross section of the population. The Test was held in parts of Birmingham, Alton/Petersfield, Bridlington, Thame, Brent, Glasgow, Craven, South-West Argyll and Northern Ireland.

Over 400 temporary field staff were recruited in Great Britain and in Northern Ireland 100 interviewers were employed.

Test Objectives:

The main aims of the 1997 Test were to determine:

- *Form Content*

The questions included on the Test forms varied. An income question was included on half of the forms. Two different versions of the ethnicity question were also tested.

- *Form Design*

A 'matrix style' form based on the 1991 Census design was compared with the newly designed 'pages-per-person' form.

- *Collection Procedure*

In a change from conventional collection methods, postback of completed forms was compared with standard enumerator collection. In South West Argyll, forms were posted out as well as posted back to assess whether this would be a feasible method for 2001.

Other areas of the Census operation which were tested:

- The production of customised maps and address lists and the automatic planning of enumeration areas using a Geographic Information System (GIS).
- The capture and coding of data and scanning techniques and optical character recognition (OCR) and optical mark recognition (OMR) as well as automatic and computer assisted coding of write in responses.

The key methodologies used within each of the main test areas were:

- Brent and Birmingham tested the income and ethnicity questions - all forms were pages per person;
- Alton, Bridlington, Craven, Glasgow and Thame tested form style and income - all forms had the minimum change ethnic group question;
- South-West Argyll tested the income question - all forms were matrix style with the minimum change ethnic group question.

Only one type of form and one set of questions was used in any one enumeration district.

Results

- *Form Content*

The results of the ethnic group question showed that there was little difference between the two questions tested. Response from households who received a form with an income question was 3 percentage points lower than from households who did not have a form with an income question.

- *Form Design*

The 'pages-per-person' form had better overall results than the 'matrix' version. In comparison with the matrix design, the pages-per-person form had a higher rate of completion (that is proportion of questions answered) and was also more suited to the scanning process. A further advantage was that the pages-per-person form was cheaper to produce than its matrix counterpart.

Collection Procedure

Statistical analysis of the response rates between the standard collection procedure and postback showed that there was no overall significant difference between the collection methods.

Postout and postback proved not to be successful. In South West Argyll the response rate was 55.0% compared with a 81.6% for conventional delivery and collection by enumerator.

The Test also verified:

- use of a Geographic Information System for enumeration district planning. The system proved to be very successful and the customised maps and pre-printed address lists in enumerator record books were well received by the field staff.
- The results confirmed that the new approach of scanning forms and using a recognition system in combination with automatic coding is effective.

Main Recommendations and Conclusions

- *Form Content*

The results of the Test have led to further small scale testing on the ethnic group question. The final proposed version is shown in the White Paper.

The Government has announced, in the White Paper, that its preferred approach with regard to the inclusion of an income question, is to identify possible alternative means of securing relevant information. Further research is underway to establish whether user needs could be met by alternative sources of data. The Government will make final proposals for inclusion of an income question once this research is complete.

- *Form Design*

The pages-per-person form will be used in the Census Rehearsal and 2001 Census.

- *Collection Procedure*

Postback proved to be a valid alternative to conventional methods of collection. This method will enable enumerator effort to be concentrated in areas, which historically have had low response rates, particularly the inner cities. The poor response to the postout/postback method indicates that this approach is too high risk for the 2001 Census.

The main points to emerge from the Northern Ireland Census Test were :-

- *Form Content*

The inclusion of an income question reduced the response rate by two percentage points. However, the extent to which returned forms were completed was not affected by the inclusion of an income question.

- *Form Design*

The response rate, completion level of basic information and level of form completion to individual questions each suggest that there is little difference between page per person forms and matrix forms. However, the level of form completion to households questions and the response rates to individual questions indicate that the page per person style forms produce more complete information than the matrix style forms.

- *Collection Procedure*

The conventional collection method has a higher response rate than the post back method although in practical terms the difference may be considered small. The collection methodology does not affect the level of form completion, given that the form has been returned.

Annex F Census Rehearsal

On 25th April 1999, the Census Rehearsal will take place in seven different local authority areas covering about 138,600 households in Great Britain. In Northern Ireland the Census Rehearsal will include around 9,000 households. The Census Rehearsal is a complete simulation of the 2001 Census operation and will ensure that the correct methodologies and procedures are in place.

Census Rehearsal Areas

The areas were chosen to collectively:

- include a cross section of the population and types of households found in the country as a whole;
- allow for regional variations in response;
- measure the success of new procedures designed to allow Welsh speakers to take part using the Welsh language;
- yield a sufficiently large number of returned forms for a realistic rehearsal of subsequent activities in the 2001 Census i.e. data processing, data quality and production of output; and
- have individual areas of sufficient size to allow employment of the full structure of the field force expected to be in place for the 2001 Census.

A Welsh area (Gwynedd), which has a high proportion of Welsh speakers has been selected as well as Ceredigion and in Northern Ireland the Census Rehearsal will be held in the Coleraine Borough Council area and the Limavady District Council area.

The areas with the latest estimated number of households are:

England		Scotland	
Bournemouth	19,600	Angus	9,100
Lincoln	38,200	Dundee City	14,700
Leeds	39,700		
Wales		Northern Ireland	
Ceredigion	8,100		9,000
Gwynedd	9,200		

These numbers vary from those announced earlier following planned geography checks by field managers and information on housing change supplied by local authorities.

As in the 1997 Census Test, completion of the Census forms will be voluntary. There will be full enumeration of all households in the designated areas and a temporary field force of about 500 staff will be recruited. This will comprise of two Census Area Managers (in Lincoln and Leeds only), a Census Area Manager to cover the two areas in Scotland, Census Officers, Assistant Census Officers, and enumerators. Separate arrangements are being made in Northern Ireland.

Main Objectives

The main aims of the Census Rehearsal are:

- to test and confirm that the methods and systems proposed for the 2001 Census will achieve their aims
- to provide final verification that the topics, questions, form design and enumeration procedures are acceptable to the public.
- to measure the quality of the data collected as a result of the enumeration and processing procedures.
- to provide staff in the Census offices with experience of the Census operation.

The Census Rehearsal will include all the activities which are planned for 2001. Evaluation of the Rehearsal will be completed by the end of 1999 and will provide the last opportunity for large scale testing of methods and processes before the Census in 2001.

Annex G Proposed Topics to be covered by the 2001 Census

In summary, the Government proposes that information on the following topics should be collected in the 2001 Census:

At all properties occupied by households and for all unoccupied household accommodation:

the address, including the postcode; and
the type of accommodation, including whether or not it is self-contained;

For households:

names of all residents (whether present or temporarily absent on Census night);
names and usual addresses of visitors on Census night;
tenure of accommodation;
whether rented accommodation is furnished or unfurnished (in Scotland only);
type of landlord (for households in rented accommodation);

number of rooms;
availability of bath and WC;
lowest floor level of accommodation;
number of floor levels in the accommodation (in Northern Ireland only);
availability of central heating; and
number of cars and vans owned or available;

For residents

name, sex, and date of birth;
marital status;
relationship to others in household;
student status;
whether or not students live at enumerated address during term time;

usual address one year ago;
country of birth;
knowledge of Gaelic (in Scotland only), Welsh (in Wales only) and Irish (in Northern Ireland only);
ethnic group;
religion (not in Scotland)*;

general health;
long-term illness;
provision of unpaid personal care;
educational and vocational qualifications;

economic activity in the week before the Census;
time since last employment;
employment status;
supervisor status;
job title and description of occupation;

size of workforce of employing organisation at place of work;
nature of employer's business at place of work (industry);
hours usually worked weekly in main job;
name of employer;
address of place of work; and
means of travel to work.

* The proposal to include a question in England and Wales would depend on a necessary change in the census legislation being made
Extract from the White Paper (*Cm 4253*).

2001 Census

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