

Census 2001 Review and Evaluation

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Data Collection Development: Evaluation Report

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ONS is carrying out a review and evaluation of the 2001 Census in England and Wales which will culminate in a Data Quality report and a General Report being published.

Plans for individual reports on specific aspects of the Census operation and a timetable for release have been published.

Each report is written in isolation and is subject to amendments as processing progresses and further information comes to light.

Reports will be released on the ONS website in the form of a high level Executive Summary and a more detailed Evaluation Report.

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INTRODUCTION

Conducting a census is a huge and complex task and a key part of the programme of planning and executing the Census is gathering the required information from each household i.e. Data Collection. The scope of Data Collection for the 2001 Census had to be considerably widened in its content, compared with previous censuses. The 2001 Census had to count a population that was undergoing significant change in societal and technological terms.

A major influence in shaping data collection for 2001 was evidence, as research and testing progressed during the preceding decade, that it was becoming increasingly difficult to make contact with people, especially but not exclusively in inner cities. This loss of contact, threatened to reduce the high level of coverage needed in the Census. The reasons for lower levels of contact included:

- growing numbers of single person households;
- changing working patterns;
- society becoming less compliant; and
- groups of the population who felt disenfranchised.

Thus the Census at the turn of the century presented special challenges and the planning team recognised that more radical approaches were required in determining the methodology to be used for the 2001 Census.

Data Collection was divided into two separate, but closely linked, projects within the 2001 Census Programme: Data Collection Development and Data Collection Support. Data Collection Development managed the development of the enumeration procedures, the training and instruction of the field force, the design and supply of all census material (including the Census forms) and the provision of support services for the public (Public Enquiry Unit) and the field force (Regional Management). This report describes and evaluates these activities and records the lessons learnt – see Annex A for a timetable of the activities covered by Data Collection Development. Data Collection Support covered the recruitment and payment of field staff, and the community liaison

programme and is the subject of a separate report.

The White Paper on the 2001 Census of Population (Cm 4253) presented in March 1999 contained four broad strategic aims. These were to:

- ensure that the question content is appropriate to meet the demonstrated requirements of users;
- deliver products and services to meet legal obligations and users' needs within stated quality standards and to a prescribed timetable;
- 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;
- demonstrate that the Census represents value for money.

This review describes how the Data Collection Development project worked to help meet these aims. The review concentrates on Field Operations (the 'front-line' business of conducting a Census). It describes how this project and associated plans were developed and implemented before the enumeration started on 9 April 2001, the methods used, the outcome in broad terms, and the lessons learned.

Data Collection Development was organised into a number of tasks under separate teams. This called for careful planning and management to ensure that the strategic aims for the Census were kept in focus and that proper liaison was maintained between all members of both the Data Collection Development teams and the teams in other closely related projects. Each team was responsible for the detailed planning, testing, implementation, management, and review of its tasks. Some teams also had additional responsibility for procuring and managing externally contracted services.

This review covers England and Wales only. However, close co-operation existed between the three Census Offices, that is, for England and Wales (Office for National Statistics), for Scotland (General Register Office for Scotland), and for Northern Ireland (Northern Ireland Statistics and Research Agency). This co-operation extended to the strategic planning, contracting out of various services, the production of

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census forms and materials, and development of detailed procedures and instructions. Although there were some variations between the Offices, a high degree of commonality was achieved.

The objectives for Data Collection Development were to:

- ensure that data collection methodology and procedures met the Census strategic aims;
- count everyone resident in the country by delivering appropriate forms to every household and communal establishment;
- enable respondents to post back their completed forms, or have them collected, for processing;
- ensure help was available to the public where and when needed;
- train and manage a large temporary part-time field force to conduct the enumeration;
- provide all the necessary materials to conduct the census;
- maintain confidentiality and security of information collected from the public.

The remainder of this report is split into three sections - Methodology, Assessment / lessons learnt and Conclusions. The first two sections examine individual activities covered by Data Collection Development and the final section summarises the conclusions reached across the project as a whole.

METHODOLOGY

General

The foundation for data collection procedures is governed by the agreed statistical methodology for the census, and a careful analysis of the tasks at each level of the field staff is carried out and modified through testing experience.

Delivery

In 2001 each Enumerator delivered forms to about 400 households (200 in inner city areas) over a period of nearly 3 weeks (9 - 27 April). The majority of workloads were based on two Enumeration Districts (ED) -

statistical building blocks - but in many inner city areas, on one. Enumerators were given a customised map with their EDs centred on separate single map sheets, and a list of addresses derived from AddressPoint, an Ordnance Survey product.

Delivery was divided into two phases. Phase one consisted of a single visit with a call-card being left if no contact was made. The second phase was a further attempt at contact with a maximum of two visits, especially in areas of multi-occupied addresses. A form and envelope were left if no contact was made.

The two phase Delivery approach was structured to avoid the risk of enumerators delaying the start of their work until too near Census Day (29th April). In the event in some areas, due to serious recruitment difficulties, enumeration activity was forced into being conducted very close to or on Census Day.

Postback

The most significant change in methodology was in the method of collecting completed forms that for almost two centuries had been the exclusive domain of the enumerators. An existing national postal system and the increasing willingness and ability of the public to return documents without having to wait for a return visit, led to postback methodology being introduced in 2001. A finely balanced decision was taken to use the local census management teams to receive and prepare completed forms for transfer, rather than completed forms being posted direct, to a central processing facility.

A traditional method of delivery by enumerators was used rather than a postout method because:

- of the lack of a national and totally reliable list of households; and
- personal contact with householders was judged to achieve a higher level of response.

The introduction of the postback method realised some benefits which included: a smaller field force than in 1991- 73,000 as opposed to 115,000 field staff - thus easing the pressure on the recruitment programme;

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freeing up resources to focus on the areas difficult to enumerate such as major inner city areas; and targeting financial resources where they were most needed.

The public was asked to complete the Census form and return it in a distinctive yellow pre-addressed envelope through the Royal Mail.

Following Census day, a period of 8 days was allowed for the bulk of posted forms to reach the local field management teams who processed the post. Post processing included the logging in of forms; checking for completeness by examining the response to four key questions for each person; and assessing the non-returns and incomplete forms for the enumerators to follow up. Managers were allowed some flexibility (a day or two) in returning enumerators to the field for follow-up. This permitted the manager an opportunity to consider the numbers of field staff required for follow-up activities and gave time to re-assign those enumerators retained to handle outstanding work in the most effective way possible.

Follow-up

The Follow-Up consisted of at least 2 visits to try to collect the forms, which was in turn followed by a Mop Up by team leaders, and later district managers. In some cases this led to a non-compliance routine.

Special Classes

There are groups of the population where it is either difficult, or not possible, to enumerate within the main field operation and where special arrangements were required. The extent of the arrangements varied, depending on the group, and every effort was made to overcome practical difficulties associated with the delivery and return of Census forms to ensure that everyone was included. In some cases the additional arrangements were simply the need to contact organisations, or other Government Departments, prior to the Census taking place to discuss practicalities of carrying out the enumeration. Early liaison also enabled the Census Office to:

- advise the organisations of what actions their members were responsible for in regards to the Census;

- request that information was cascaded throughout the organisation to those who needed to know;
- seek information required to assist field staff with the enumeration.

As a result, the Special Classes fell broadly into three groups:

- where standard enumeration would be conducted, sometimes with the assistance of the staff on site, such as:
 - Foreign Diplomats & Consular Representatives
 - Gypsies & Travellers
 - Hotels
 - Hospitals
 - Police Lock-ups
 - Prison Service Establishments
 - Refugees & Asylum seekers
 - Royal Households
 - Students
 - Travelling Fairs & Circuses
- where, for security reasons, specific instructions were issued to the Establishments from the Census Office (in some cases in the form of Defence Council Instructions). Standard enumeration procedures were followed but in some cases the Enumerator involved had to be identified in advance and may have been escorted:
 - Foreign Armed Forces Establishments (including all residences inside the Establishment boundaries)
 - HM Service Establishments (including all residences inside the Establishment boundaries)
 - Immigration Detention Centres
 - Naval Vessels in port

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- Other Establishments where access is controlled for security purposes
- where enumeration could not be carried out in the standard manner or by the ordinary Enumerator for health and safety reasons, such as:
 - British & foreign registered commercial shipping in port, which was enumerated by specially appointed HM Customs & Excise Enumerators
 - People Sleeping Rough who were enumerated, overnight, by specially appointed Enumerators

Field Checks

A key aim of the 2001 Census was to maintain the high level of coverage achieved in 1991, and to concentrate resources on improving coverage amongst hard to enumerate groups. An important part of the strategy used to achieve this aim were the checks carried out by field staff to ensure the quality and coverage of the enumeration. There were 4 key coverage and quality checks all of which had undergone thorough reviews to ensure that they would be easy and practical to apply in the field whilst still being effective in their purpose:

- Census District Check - conducted by the Census District Managers (CDMs) prior to the enumeration. Whilst checking that Enumeration District (ED) boundaries were clear and workloads reasonable, CDMs were able to become familiar with their area, identify any potential enumeration problems and consider the most effective allocation of Enumerators to EDs.
- Field Check – conducted by the Census Team Leaders (CTLs) during delivery and follow-up visits. The CTLs were required to accompany their Enumerators and complete a checklist whilst observing them carrying out their enumeration tasks. The aim of the check was to establish that the Enumerator was following the correct procedures and was properly identifying and recording every household in their ED whilst giving the CTLs the opportunity to

become familiar with the area and to identify which of their team needed extra support or training.

- Form Completion Check – conducted by all field staff levels. Each form was checked to ensure that it was properly completed. A slimmed down form completion check was introduced which involved ensuring that responses had been received to certain key questions on each form. This replaced a more detailed and laborious check that had involved considerable effort (and cost) which realised little discernible benefit. Experience from 1991, and subsequent field tests leading up to 2001, demonstrated that a detailed check of every question by field staff did not significantly reduce errors or omissions in the data subsequently processed. Households returning incomplete forms were re-visited by Enumerators during follow-up to obtain the missing information.
- Form Reconciliation – carried out at the end of the enumeration in three stages. The check was first completed by Enumerators to ensure that every form number in their record books was accounted for. CTLs, and then CDMs, carried out further checks to confirm that every form had been accounted for.

Teamworking and Field Staff Learning

The very large temporary field workforce always imposes special challenges. The key was to ensure that consistent and accurate learning was cascaded to every employee.

The most senior field managers were directly trained at two separate events run by the Census Office team, who themselves underwent training on learning and teambuilding techniques. The field managers trained their own managers in four sessions, and they in turn trained their teams of team leaders and enumerators in three sessions for each level. This method helped to present the key learning points in an appropriate manner whilst providing an opportunity to assess and resolve local issues.

The learning was supported by detailed instructions, guides and videos for all levels of field staff. There were also guides on health and safety and a special pocket guide for enumerators to use in the field.

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Greater emphasis on teamworking was introduced into the way the field force operated and was managed. This approach was a reflection of the way people were generally being managed in the workplace, and was especially appropriate to a temporarily recruited workforce who needed to build teams in a relatively short time.

The approach also introduced more flexibility into the operation within a prescribed framework. Striking that balance through training, instructions and other guidance presented new challenges in the way the operation was conducted.

Regional Management and Information

A Management team of 4 Regional Managers (RMs) was set up within ONS to manage the 103 Census Area Managers (CAMs) and provide the management and communications interface between CAMs and Census HQ. Each RM and a deputy was responsible for a particular region of the country:

Region 1 - North

Region 2 - Midlands and East Anglia

Region 3 - Greater London and Essex

Region 4 - The South and Wales

RMs and deputy RMs were recruited from within ONS and externally. The external applicants were contracted for the duration of the job and left ONS on completion. The Managers took up their positions between April and August 2000. A Census Manager For Wales (CMFW) was appointed and although the CMFW managed the seven Welsh CAMs, the HQ team were tasked with handling associated administrative matters.

PC technology (Field Management Information System - FMIS) was used for the first time in the field to improve and speed up communications between field managers and between field managers and HQ. FMIS was a crucial part of the management of the Field operation. It consisted of two elements; a series of databases for use by CAMs and HQ staff and a system for CAM and CDMs to report on progress, in pre-formatted reports, relating to key field activities. These progress reports were also held as databases in the

FMIS and were accessible by CAMs and HQ staff. The reporting system was a key vehicle for feedback on the progress of the Census, and formed part of the overall flow of information through the Regional Management Team.

Outsourcing

An important change was the move to outsource even more elements of the Census, on a greater scale than had been done previously. Apart from the contract for processing completed census forms, many other contracts were set up and managed. The greater use of outsourcing in 2001 brought an influx of external expertise and knowledge, a lessening of risk for the Census Office, savings realised through a series of competitive bids, and a transfer of skills. With it also came a greater degree of contract management and effort required to achieve the standards and quality of services required for all three Census Offices in the United Kingdom.

Contracts / services managed by the project included:

- planning and handling the postback of completed forms (Royal Mail)
- providing help with enquiries from the public through helplines during the recruitment phases and the Census itself (Cable & Wireless)
- designing and printing all public forms (Lockheed Martin)
- designing and printing all other documents and materials (Central Office for Information)
- distribution and collection of all census forms and other materials, and subsequent disposal other than completed census forms (TNT)
- planning and producing field staff training videos (Scottish Executive Video and TV Production Unit (SEVTPU) in collaboration with Mirage TV Productions - Planning managed by ONS, Production by GROS)

Forms Design and Logistics

The use of scanning technology for processing had a significant effect on the way the census form was designed. Whilst the design needed to reflect the requirements of respondents and processing

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requirements it also needed to take account of advances in printing technology. New form design software speeded up the design process but also introduced new challenges of balancing the very important aspect of public acceptability of the form and the exacting design requirements needed for scanning technology.

The design and production of all the other census documents also had to be handled, using a combination of in-house technology, and for larger volumes, outside contractors.

The Logistics team ensured that strategies were in place and implemented for the huge job of distributing over 4,500 tonnes of field materials necessary for the Census, and collecting completed forms and other census materials.

Forms and other materials supplied to the 2001 field staff in England & Wales

Category	No. of different types of forms/ materials in the category	Volumes of forms/ materials produced for the category (million)
Recruitment	100	4.65
Geography	16	0.27
Public Forms	51	66.80
Enumeration	34	35.72
Pay	75	1.65
Instructions & training	39	0.48
Publicity	167	1.90
Other materials including stationery	64	36.25

In Wales, Enumerators were instructed to leave an English and Welsh language version of the Census form at every household. More bilingual Census forms and materials were made available than in previous censuses. ONS also appointed for the first time a Census Manager for Wales to manage field staff, to help in public relations and in dealing with various agencies and communities in Wales.

Security and Confidentiality

A Security Review was carried out prior to the Census by all three Census Offices and the key messages concerning security and confidentiality during the Data Collection phase were reinforced to all levels of field staff. The instructions and training programme emphasised the importance of the issue and every member of the field team (including contractors) had to sign an undertaking to guarantee not to divulge information obtained during the course of the Census to anyone outside the Census organisation. All field staff were directed to treat completed forms and associated documents with utmost care and ensure that secure accommodation was used for the storage of completed forms. They were also instructed to ensure that access was restricted to staff who had signed the 2001 Census confidentiality undertaking.

Managers were asked to observe Enumerators during the process of carrying out their duties and to take immediate action if there appeared to be potential problems or lapses in their compliance with security and confidentiality requirements. Requirements were further re-enforced by the threat of penalties in the event of there being any divulgence or use of Census information gained during the course of employment on Census duties.

Public Enquiries

The Public Enquiry Unit was responsible for dealing with queries from the public, by telephone, correspondence and email. Telephone helplines were set up to respond to the public during the Census, and to provide a recruitment service for the Census and Census Coverage Survey (CCS).

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Under a contract with Cable and Wireless, BroadSystems Ltd. were appointed to provide call centre services and were responsible for handling the majority of public enquiries. A smaller unit, comprising 12 staff, was set up within Census HQ to deal with more complex enquiries. Over the period that the Call Centre was operational (April to August 2001) BroadSystems and Census Offices staff handled in excess of 2.6 million enquiries, exceeding expectation by around 2 million. The Call Centre utilised Interactive Voice Response (IVR) systems with call costs set at local rates. At peak, in an effort to manage the unprecedented number of enquiries, an additional 400+ lines were installed by BroadSystems, the Census Offices seconded extra staff to the HQ team, and field staff and local authorities set up local schemes.

Foot and Mouth

A series of new procedures, based around the basic enumeration procedure, was required at short notice to deal with this unexpected crisis that had erupted in large parts of the country before the enumeration was due to take place. Close liaison was maintained throughout with the former Ministry of Agriculture Fisheries and Foods (MAFF) and the National Farmers' Union and the National Assembly for Wales to ensure that Census field staff would not compromise the work being done to contain the outbreak whilst conducting the Census.

Special methods of delivery and collection were quickly arranged to ensure that as complete a coverage as possible was achieved in the areas hit by this major epidemic. Additional instructions were issued to field staff to provide guidance on the need to change the arrangements for delivery and collection of census forms where access to premises was not possible or advisable. In the majority of cases the Royal Mail had already established procedures for handling mail and it was decided to adopt a postout / postback procedure in these areas wherever possible. Close liaison was maintained between MAFF, Census HQ and field managers during enumeration and the position was routinely reviewed to ensure best practice was adopted at all times.

ASSESSMENT AND LESSONS LEARNED

General

In the months preceding the Census, a number of major issues were the launch of a high profile campaign for a Welsh tick-box, pressure from the RNIB to enable more independent participation by the blind or partially sighted and finally the outbreak of Foot and Mouth disease in March. These, together with postal difficulties caused by industrial action all resulted in additional pressures on the field operation and stretched resources to the limit. However, despite these issues, the 2001 Census was conducted as scheduled and results to date show that a coverage of 98% of the population, similar to 1991, was achieved.

The full effects of Data Collection for the 2001 Census will not be known until processing is complete, but sufficient feedback exists to highlight some key lessons and provide an initial assessment of findings. Although it is important to record an early assessment, findings will feed into more thorough and detailed reflection of events that will inform the work ahead on strategic evaluation and development over the next decade.

The initial assessment has been achieved by debriefing field staff, reviewing written reports from field staff, evaluating each project and the contracted services, and assessing the extensive range of internal data and information databases which have been built up over many months of operations.

Field staff themselves have provided much useful information. Details have been gleaned from a series of nation-wide debriefings with senior census managers, input of which was augmented by these managers' own teams; numerous reports and notes from all levels of field staff; plus information arising from the interaction between field staff and the regional management team at the Census Office spread over more than twelve months.

Detailed reviews have been conducted with each of the service providers who were involved with the 2001 Census. These have focused on the methods employed, the outcome of the services, and the lessons learned.

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Changes in society and rapid development of new technology present considerable challenges in terms of conducting a successful census. The 2001 Census clearly demonstrated that there was a need to broaden our skills base and be more innovative in order to effectively manage a raft of increasingly complex issues. Revised and new legislation influenced public perception of rights under Data Protection, Human Rights and Freedom of Information etc. which in turn impacted on data collection. Although it was appreciated that the collection methodology had to change there was insufficient recognition during the planning process, of the extent to which the public were more PC literate, had greater experience of using Call Centres, and had a higher expectation of technical innovation.

There were also difficulties associated with:

- enumerating a generally less compliant society;
- making contact with householders and other special groups; and
- a failure to attract sufficient numbers of field staff which presented particular problems with enumeration in some areas.

The 2001 Census has confirmed once again the need for careful and detailed planning of all Data Collection activities. Events and communications move much faster now. There must be greater emphasis on risk management in order to ensure contingency plans adequately reflect the difficulties of conducting a census operation in an increasingly changing and volatile environment.

Enumeration (Delivery)

The majority of Enumerators completed their Delivery Rounds on schedule (by 27th April). Of the 103 Census Area Managers (CAM), 94 reported that delivery had already been completed or would be completed by the end of Census Day. In the remaining 9 CAM areas small pockets of households (in 1 - 3 Census Districts) were reported where delivery had not been completed but would be completed by the end of Monday 30th. Most delays appeared to be due to recruitment problems or late resignations of Enumerators. Difficulties gaining access to properties and delays in receiving additional supplies of forms were also noted as reasons. All 9 of the CAM areas reporting problems covered inner cities and 5 of them were London CAMs.

Lessons Learned

- The additional procedures put in place to handle the foot and mouth outbreak were successful and delivery in affected areas was achieved without any detriment to the overall timetable.
- Management information received from so large and widely dispersed a field force is extremely helpful to Census HQ. Not only does it help to compile status reports on targeted activities during field operations, both for HQ and for senior field managers, it also assists in the control and management of the field force and its tasks, and its financial provisioning. The Field Management Information System (FMIS) used in 2001 underpinned the need for and importance of timely, reliable and robust information. This experience must be built on, extending the use of technology and identifying further uses of such systems in a future census, whilst paying attention to its fitness of purpose and usage in the field.
- The public helpline was inundated with calls from people concerned that their Census forms had not been delivered. In many cases, these calls came well before the end of the Enumerator Delivery Round. To avoid public concern and undue strain on the helpline, any future publicity strategy should ensure the public is made more clearly aware of the timetable for delivering and posting back forms. Contingencies should be prepared well in advance for dealing with areas where the delivery timescale can not be achieved.

Postback

The final post-back response was 88 per cent, far exceeding expectations. Field staff in the follow-up exercise, which was extended in some areas, collected a further 7 per cent of forms. An estimated 3 per cent of forms were delivered to addresses that were either vacant or second residences. On this basis, and the recent results from the Census, the final overall response is at least as good as in the 1991 Census. Response in Wales appears to have been slightly better than in England overall.

Postback as a collection methodology was a success. In all about 22,000,000 forms were mailed back by the public. This exceeded all expectations and was far in

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excess of the model that had been used when a postback rate of 70% was expected. The effect of this high return meant in theory far less effort was needed to follow up on non-returns because of the lower residue faced by field staff in early to mid-May.

There was however a counter effect that caused considerable disruption to field staff and led to the public contacting the Census Helplines in far greater numbers than was expected. That effect was the postal flow to local field managers. Backlogs built up in the system and disrupted flow to the local management teams. The follow up by field staff was hampered by this and led to unnecessary callbacks because householders said they had already posted back their form. The teams worked flexibly and very hard to overcome these issues with considerable success, which is to their credit.

Another consequence of postback was the increased numbers of forms being received directly at the Census Office (about 450,000: a fourfold increase on 1991). In response to the unprecedented number of calls to the main Helpline asking for forms, a dedicated emergency Call Centre was set whose sole purpose was to send out forms. The Call Centre was operational from 27th April 2001. Completed forms were returned direct to ONS. Additionally, from 30th May, after the closure of the local collection points, forms were directed to ONS. Delays in householders returning forms and postal difficulties resulted in more form being returned after the cut-off point than had been anticipated. In both cases, these forms were specially routed through the mail system and were assimilated into the main stock of forms collected and made ready for processing.

Lessons Learned

- Postback appears to be an effective method of data collection. A key lesson is to consider whether a 'central postback' alternative would have been better. The 'local' approach worked largely because of the strenuous efforts of the field force, but they were at the mercy of the postal flow. Directing post to a centralised facility could be more attractive as it enables a focused follow up of non-returns, but above all removes the huge burden on local field teams. New technology may enable faster processing

of mail and risk is better managed with postal service providers. Quality and form control will remain key issues, however.

- Postal flow, even to a central facility, will still need to be addressed for the gearing of resources needed for receipt and check-in of completed forms. The postal services industry may undergo major change in the next decade because of increased competition and new technology. This could open up new opportunities for using a postback process in future.
- Modelling for postback in the future must include less reliance on a single national postback rate, although the 70% estimate was considered a reasonable rate for planning, having been based on international experience and testing. Variable rates were planned across very broad geographical areas only, but more needs to be done in modelling for a range of national and more local rates that can be tested and used to inform the service delivery process. More attention must also be paid to variability of service delivery from area to area, and this should be carefully considered with future postal service providers. Risk and contingency plans, and therefore appropriate measures, can be more effectively addressed and developed.
- The success of Postback suggests that Postout of census forms may be a goal that is becoming more achievable. However, that is a subject for later consideration, and not part of this paper, as indeed are alternative forms of capturing census information from the public.

Follow-up

Following the problems experienced with postal flow, field staff were advised, if necessary, to delay the start of their Follow-up visits. However, despite a later start to follow-up many householders, when Enumerators re-visited them, were claiming that they had posted back completed forms which was difficult to refute because there were acknowledged mail backlogs which resulted in a knock-on delay to forms being received and recorded in the system. Many Enumerators, particularly those working in areas hit by industrial action, felt that there would have been advantages to delaying follow-up still further as it would have reduced the risk of visiting and possibly antagonising householders who had posted back forms that were caught up in the system.

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The delayed start to Follow-up compacted the timetable for post enumeration tasks. Many Enumerators had to have their contracts extended by a week to help overcome this problem.

Lessons Learned

Consideration should be given to using a more flexible start date for Follow-up, to enable the greatest possible postal response before visits commence. Impacts on post Enumeration tasks need to be more clearly identified and contingencies put in place.

Consideration must also be given to allowing more time for the effects of postback to work in the field.

Field Staff

A significant number of field staff worked more hours than had been originally planned. In some instances the additional hours could be explained by the impact of unforeseen events such as foot & mouth and major postback delays, but in other instances the tasks simply took longer, in some areas, to complete than had been estimated.

The greatest pressure was at the local field managers' level. The teams of four - District Manager and Team Leaders - bore the brunt of the effect of slow postal flows, staff turnover and, later, payroll problems. Foot and Mouth restrictions added to the workload in the areas most affected - Devon, Cumbria, North Yorkshire and Mid/North Wales.

In inner city areas, some workloads were even greater due to a high turnover of Enumerators who were sometimes leaving at crucial stages and where the reserve field staff had been used up.

Lessons Learned

- The close link between what field staff are tasked to do and the budget for paying for that activity is an important one. It is a balance that is not always easy to achieve. There is a constant drive to keep the field staff jobs simple, based on straightforward procedures. But this

is an aim being tackled in an ever increasingly complex world, and operations in the Census can be unpredictable and be affected by many factors. More radical approaches may be needed to reduce the burden on field staff and change procedures markedly.

- The hours worked by field staff need reappraisal.

Field Checks

The full effectiveness of the checks will not be known until processing is completed. Anecdotal evidence suggests that the checks were carried out but the concern is that the pressures of postal flow and the issue of workloads may have led to corners being cut on some of the checks. This will have reduced their effectiveness but the extent is not known yet. However, early results indicate that missing responses to the key person questions of age, sex and marital status compare favourably with international experience.

The earlier geographical check appeared to have been effective. Feedback suggests this check was generally considered to be useful for highlighting problem areas which enabled solutions to be developed in advance of enumeration taking place.

Team Working and Field Staff Learning

The greater flexibility in 2001 of field staff to work in teams with less emphasis on a traditional census management hierarchy was successful. Senior field managers were actively encouraged to use their experience and skills they had brought to the Census from their previous careers. This was particularly so in setting up networks or making contacts, dealing with the media and resolving a wide range of localised issues. A high level of pro-activity was engendered and was welcomed by the managers.

There was, however, a perception that unacceptable levels of bureaucracy existed which reduced autonomy, and hindered managers ability to handle matters directly or adopt the degree of flexibility that many had been used to in their previous jobs. Initial expectation was high but later this gave way on occasion to some frustration and disappointment as field staff were expected to adhere to constraints that were considered essential in managing the conduct of an operation as

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large as the Census. The primary criticism related to the number of forms used for each activity, in particular those relating to pay.

Nevertheless teamworking proved a key factor in overcoming many local difficulties at the enumeration levels. For example when the postal problems started to emerge, some enumerators were used to help the managers' clear the backlog.

The teams held together very well because of the way in which teamworking was emphasised from the outset and constantly referred to throughout the instructions and training. This 'connectivity' - especially between Area Managers, the Regional Management team at the Census Office and at the 'local level' - undoubtedly helped during some of the stiffer challenges encountered.

The field staff rely heavily on their training, instructions, guides and various other aids. The package for 2001 was considered successful. The training given by the Census Office to Area Managers and the field pocket guide for Enumerators were especially welcomed as useful, informative and well presented.

The suite of training videos were also praised and added a sense of realism to the work of field staff.

Lessons Learned

- There is a need for continuing review, as the learning environment continues to advance. The strategy and approach for preparing field staff must be as effective (and enjoyable) as possible, and new ways must be tried to maintain the high standards achieved. Technology will play an increasing role, and more 'direct' training may be possible, thus reducing the risks inherent in 'cascade' training.
- A key hurdle to the preparation of instructions is the need to reach agreement on procedures early enough to ensure that training plans and instructions, all of which require printing and distributing, are in place in time for when they are most effective.

- Improving and simplifying administrative processes and minimising unnecessary bureaucracy must remain a key objective.

Regional Management and Information

Evidence from field staff debriefing confirms that the Census Office Regional Management team provided excellent support to the senior field managers and their teams. Speedy response and problem resolution were the fundamental essence of the teams success. This was a considerable achievement amid field operations in 2001 that at times proved very tough on the resources and the systems that were employed.

Communications with the senior field managers were generally very good, assisted by technology, although the managers felt they needed to have more information to help them better understand the overall picture. This was a difficult balance to strike but one that will need to be addressed.

The Regional Management team was able to provide considerable amounts of intelligence to help the monitoring of field operations and to pick up early warning signals of potential issues. This stream of information worked very well and was a key input to the decision-making process in real time during the enumeration.

The FMIS (sic), mentioned earlier in the report, was an important source of information for the team and provided useful data concerning particular activities, but the team's primary source of information remained its daily contact, through email and telephone, with the senior field managers, and visits made to regions. The collective information flow was considerably more than anticipated and at times was difficult to handle due to too low a resource base at HQ, but this issue was overcome through hard work and commitment without serious consequences

Lessons Learned

- The concept of a Regional Management team is good, but it must be appropriately resourced and empowered to provide the best possible

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service and support to field staff. The Census 2001 was challenging for front-line managers, and particularly the regional management team. A review is needed on how to improve the management and the resourcing of this team to meet the challenges that will emerge over the next decade. Good communications and working relationships between the Census Office and its remote team are paramount. Restructuring the HQ team and reducing ratios between them and the field staff need to be addressed. The Regional Management team should be brought in earlier, and staffing ratios (i.e. vis à vis field managers) reviewed.

- The importance of management information cannot be underestimated, and, with the right tools, provides an HQ regional management team with useful data. A key objective must remain, to ensure information systems are robust, have reliable functionality, and are appropriate in their application in the field as well as at HQ. They are essential for data collection purposes and serious consideration must be given to providing IT to district manager level to improve communications.
- Improving management information systems must be a key objective. The systems need to be more responsive to events, be more robust, and more focused on requirements, to be of use both to the senior field staff and the Census Office. Functionality and system management must be reviewed and made simpler, and all of which should be controlled under a single team.

Outsourcing

The use of external service providers has brought mixed fortunes. On the positive side, the contracts have generally delivered quality services, risk has been transferred out from the Census Office, strong partnerships were formed, considerable goodwill on both sides resolved some very difficult issues, and skills have been transferred to the Census Office. However the effort required to manage the contracts was under-estimated and, in an operation as complex as the Census, there are bound to be problems which may not be as easily solved because of contractual and operational constraints (involving resources and costs) in a fast-moving arena.

Lessons Learned

- The effort required to manage several large contracts was a significant drain on resources, and at times it conflicted with the daily business of running field operations. Considerable effort was made to ensure the services were delivered, but future outsourcing needs to consider more carefully the potential impact of external influences on requirements for service delivery.
- Contract management awareness and understanding, through training and teamworking, should be continued and extended as necessary, so that operational managers continue to regard the crucial importance of contractual rights and obligations. This will take on even greater significance if more outsourcing is envisaged in future. But this approach can only be successful if the right resources are in place to give due and equal focus to both operational and contractual matters.
- The approach adopted for procurement of services was generally successful. This is very challenging in the context of a Census. There is no doubt that good partnerships yield results and every effort should be exerted in provisioning for a Census to ensure that the unexpected has a better chance of being tackled well.

Form Design and Printing

The public form design process achieved its goal by providing the many and varied copies ready for very demanding print schedules. The standards of design and print quality were finely detailed which required very exacting quality parameters, yet the incidence of faults with the finished products (i.e. millions of forms) has been low. The design also took account of the drop-out colour - essential for processing - which was a new design consideration, and demanded a different approach to the design and placement of text and graphics.

The inclusion of bar-coding on each form was an innovative process that has since been proved a success as processing has progressed.

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Many other forms were produced and materials acquired ready for distribution. The involvement of many internal customers in the Census Programme required tight control of requirements and timetables. Even so there were problems that were resolved with the huge support from the service providers involved.

This work was achieved in a theatre of dealing with international as well as national teams, providing services and products. Some of the overseas providers were based in USA, Holland, France, the Philippines, and China

Lessons Learned

- The process worked well and would need little change, other than to adapt to, inevitably, new design software and technology. The quality assurance procedures worked well. The use of good design software and the need for reliable communication channels are essential.
- Specifying print requirements long in advance of the Census is particularly difficult and challenging. Service provision and budgeting will need to take account of the fact that many more documents need to be designed and printed later as procedures are finalised. The alternative is to finalise procedures earlier which may be unrealistic. Development and management of timetables must remain a key task as they require careful planning and understanding by service providers.

Logistics

The very large logistical programme enabled all supplies to reach the field staff to carry out the Census, and for all completed census forms and other materials to be collected or disposed of. There were problems of late deliveries and collections, and some reprints were required, but this is to be expected in an operation the size of the Census, and on the whole all aspects were successfully managed.

Storage and working space was an issue for some District Managers. Firstly, the size of the district in terms of households varied considerably and District Managers did not have always sufficient room to

receive and sort posted forms. The postal flow problem exacerbated the issue so that field staff teams were at times overwhelmed by the amount of post that had to be processed at any one time.

Secondly, the absence of storage space, particularly in London was an unexpected difficulty. Recruitment was problematic in parts of London and many District Managers, who were employed, lived significant distances from their areas. This occurred in areas where there was already a shortage of storage space. Large storage facilities were acquired through one of the service providers and these were used to accommodate the supplies and act as local field office for up to 80 districts. Although the effort in procurement was high, the offices served a vital purpose, and many problems were overcome by the sheer hard work and innovation of local managers and their teams.

All forms and materials were collected from over 2,000 points and transferred safely to the processing centre, with only a handful of areas being collected later than scheduled.

Lessons Learned

- The knock-on effect of late print specifications must not be underestimated. The distribution strategy is sorely impaired if the numbers and types of forms and materials are not more or less decided well in advance. This is probably very difficult to achieve because of the nature of Census planning, but nevertheless the issue needs to be addressed.
- Late deliveries to field staff (mainly because of recruitment problems) must be minimised, due to the amount of inconvenience caused to the field force.
- Detailed planning and quality assurance is essential, as a miscalculation or oversight can lead to severe repercussions in a business arena where the multipliers are huge.

Wales

The response from the public in Wales seems to have been high, and procedures have generally worked well. Enumerators in Wales had an especially difficult task,

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with the extra responsibility of working in two different languages, dealing with two different versions of the Census forms and as a result, having to carry out a more complex form check.

Lessons Learned

- Open channels of communication must be maintained with all key contacts in Wales in the intercensal period, including the Welsh Assembly, to ensure that data needs are best met through appropriate form content and design.
- Particular consideration should be given to the size of the enumerators workload in Wales and whether their tasks could be simplified.

Security and Confidentiality

A very small number of incidents took place in the field which could have jeopardised the security and confidentiality of the Census but did not. There was only one serious incident involving a breach of confidentiality. The incident, which took place at St Hilda's Community Centre in East London, involved nearly 190 forms which were left outside the field office in a waste bag. About 60 of the forms contained personal information. An independent investigation was launched and the findings made public in a Press Release issued by the Registrar General on 28th February 2002 (see Annex B).

Lessons Learned

- Despite tests, systems remained vulnerable to human error and work pressures compounded the chances of making mistakes. This particular census area, in which the incident occurred, was regarded as one of those hardest to count and there had been recruitment and accommodation problems. The team involved was under strength. Work was delegated to maintain flexibility but, although the investigation showed that instruction manuals were clear and comprehensive, the quantity of material meant there was a need for better cross-referencing and training to ensure staff had the appropriate guidance.

Public Enquiries

The service was overwhelmed by the number of calls that far exceeded all expectations. This was tremendously encouraging, in as much as it demonstrated that the advertising campaign publicising the Helplines had succeeded, but put pressure on the system which at times was unable to cope. Additional resources and extra lines were successfully added to ease the pressure.

The Helplines were very useful for the recruitment purposes and saved enormous effort.

The automated messages were not always easy to use, but there is evidence to suggest there is general unease with this sort of technology in the public domain. The Census, as a subject, is not the easiest to convey on a helpline facility.

Lessons Learned

- The Helplines were an essential means of dealing with public enquiries. The Census Offices would not have been able to cope directly with the number of calls received.
- The numbers of emails received indicated that there was a greater requirement for this service than had been anticipated. Future plans need to assess the extent to which each form of enquiry service can be utilised i.e. email, web, Helplines.
- Helplines need to be easy to use, and designers of automated response processes must make them as user-friendly as possible. However there should be an even greater synergy between the Helpline and with events as they occur during the Census, and with the way publicity manages those events.
- The internal processes backing up a helpline service - e.g. recruitment - need to be as responsive. A total service approach is required.

Foot and Mouth

The outbreak of foot and mouth threatened the Census in large areas of the country. A key element was the co-operation required of the farming community at a time of crisis for its members and their livelihoods. Due to

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Careful and prompt action and enormous co-operation by many agencies and the communities affected the enumeration was able to take place.

The special arrangements involving the delivery and collection of supplies and completed census forms worked particularly well, with much effort and care taken by field staff.

Very few incidents of alleged breaches of the restrictions were reported and these turned out to be largely unfounded. This is particularly noteworthy in circumstances that could so easily have proved disastrous.

Lessons Learned

- Careful and detailed planning and appropriate consultation are vital. Responsiveness is the key.
- Although this was a highly unusual and unpredictable event it is vital to ensure information about the 2001 experience is retained for future contingency planning.

A considerable number of lessons have been learned. Much of it positive due to a heavy investment in planning, the unstinting commitment of all concerned and the ability of field staff, the Census Office teams and service providers to find solutions in response to a myriad of problems - great and small.

Despite the successes, there have been some inadequacies and some failures which must be acknowledged, recorded and addressed in planning for the future.

The Census is unique in the business of government, touching many aspects of both public and private enterprise, in its aim of connecting with every living person in the land. The 2001 Census made great strides in tackling risk and used the private sector to deliver a wide range of services and achieve the key objectives.

The opportunity now arises to reflect on the lessons learned and take them forward in a strategic development programme not only to consider the changes that would need to be made in conducting a future traditional Census, but also to review alternative methods of counting the population.

CONCLUSIONS

There were a number of challenges for the 2001 Census, but the enumeration was conducted on time with the help of the sterling efforts of the field staff and the teams at the Census Office. The large amount of change taken on board, amid a major foot and mouth outbreak and the prospect of a General Election, made the field operation one of the most difficult of modern times. Nevertheless, the public engaged with the Census and the postal response was huge - due in no small part to the publicity campaign.

Many new and exciting methods were adopted which impacted on plans for data collection. The successful conduct of the census indicates that the methods chosen achieved our strategic objectives and findings will be key in helping to shape plans for any future census.

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Annex A.

Timetable of field activities covered by Data Collection Development (DCD) Project

August, December 00	Census Area Manager (CAM) training courses
November 00 - February 01	Census District Manager (CDM) training courses
November - December 00	CDMs carry out Census District Check
Begin January 01	Recruit Census Team Leaders (CTL)s and Enumerators
January/February 01	Bulk supplies delivered
Late February 01	Complete CTLs Appointment and Briefing
February - April 01	Conduct CTL training courses
February - March 01	Complete Enumerator's Appointment and Briefing
Early April 01	Conduct Enumerator Delivery training
April 01	Delivery of forms to public
End April - early May	Conduct Enumerator Follow-up Briefing
April 01 - August 01	Public Helpline operational
29 APRIL	CENSUS DAY
May 01	Oversee and monitor receipt, checking and recording of forms received through the post
	Oversee and monitor follow-up visits to collect outstanding forms
	Enumerators to return all material to CTLs
	CTLs carry out mop-up of non response
by end May 01	Receive all completed material
from end May 01	Redirection of postal returns to Census HQ
by start June 01	All completed material ready for collection by Census HQ

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Annex B

Census investigation:

Statement from Registrar General

An investigation into a breach of census security last summer at a field office for the 2001 Census has shown that improvements could have been made to the way the last census of population was carried out and managed.

The census was a massive undertaking, with around 24 million forms being handled by a workforce of over 70,000 people. The incident, which took place at St Hilda's Community Centre in East London, involved nearly 190 forms which were left outside the field office in a waste bag. About 60 of the forms contained personal information. As well as writing to all those whose forms were involved in the incident, Len Cook, Registrar General for England and Wales, commissioned an independent investigation. The need to maintain the confidentiality of information provided on census forms was of paramount importance, something all census staff recognised and understood well. That meant forms for the census were held under the tightest security and public expectations were high.

The investigation into the incident showed there was no single, simple cause but a most unfortunate combination of causes. Despite tests, systems remained vulnerable to human error and work pressures compounded the chances of making mistakes. The particular census area was regarded as one of those hardest to count and there had been recruitment and accommodation problems. The team involved was under strength. Work was delegated to maintain flexibility but, although the investigation showed that instruction manuals were clear and comprehensive, the quantity of material meant there was a need for better cross-referencing and training to ensure staff had the appropriate guidance. The investigation has helped ONS gain a better understanding of the complex mix of causes which contributed to the incident and has pointed out what can be done to better anticipation of situations which place undue pressures on work teams. It will form an important part of the evaluation of the census that is now taking place.

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Census Topics	Target Dates for Release
Legislation	Published
Non-Compliance (Executive Summary Only)	Published
Data Needs	Published
Geography	Published (Executive Summary)
Publicity	Published
Data Collection Development	Published
Data Collection Support	Published
Census Coverage Survey	Published
Processing	Published
Annex: Quality of Data Capture and Coding	Published
Downstream Processing	Published (Executive Summary)
Data Quality	
- Question non-response rates	Published
- Disclosure Control (Executive Summary only)	Published
- Data Validation (Executive Summary only)	Published
Edit & Imputation	Published
One Number Census	
- Quality Assurance	Published
- Lessons learnt (Executive Summary only)	Published
Output Policy	Published (Executive Summary)
Output Production	
- Part 1:Review of Output Released to date	Published (Executive Summary)
- Part 2:including Sample of Anonymised Records (SARs)/Origin Destination Matrices	Published
Census Access	Published
Programme Management	Published (Executive Summary)
Quality Report	Published
General Report	Published

Please note that the dates for release of individual evaluation reports noted above are target dates, and therefore subject to change. For the latest information please visit www.statistics.gov.uk/census2001/reviewevaluation.asp