

Taking Scotland's 2001 Census - A Review

PART 2

Census Operations

**General Register Office for Scotland
June 2002**

Foreword

'Taking Scotland's 2001 Census - A Review' is the Registrar General's assessment of how the Census in Scotland measured up against its 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.

The first part of the review on Census User Needs and Legislation was released in March 2002.

Census Operations is the second part of the review; however, the section in this part of the review on processing has been delayed and is now scheduled for release January 2003.

The two remaining parts of the report on Quality of Census Results and Value for Money are scheduled to be released by March 2003.

Each part of the review is written in isolation from the remaining parts, and the lessons learned may be reviewed in light of future parts of the review. A final published version is scheduled to be released by March 2003.

Part 1: User Needs And Legislation

Part 2: Census Operations

Part 3: Quality Of Census Results

Part 4: Value For Money

Available March 2003

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2. Census Operations

Executive Summary

Getting Census forms to and from over 2.3 million households in Scotland is a huge and complex undertaking, involving precise geographic planning, and the recruitment, training, and payment of over 8,000 temporary field staff.

Delivery of Census forms was virtually completed on schedule. A small number of households, after calling the Helpline, had their Census form delivered after Census day.

For the first time householders were asked to postback their completed Census forms in pre-paid envelopes. Although there were operational problems with postback, the strategy in relation to reducing the risk that we would be unable to recruit sufficient enumerators and also in terms of response rates has worked well. Whether or not postback had a detrimental effect on the quality of responses will be assessed in the next part of the review - Quality of Census Results.

The dedicated Scottish publicity campaign implemented across most media is considered to have worked well in meeting its objectives to raise awareness of the Census, its importance and legal requirements, as well as in encouraging the return of completed Census forms.

Help and guidance in completing the Census form was made available through a number of sources. This help was well received. However, there were calls from some organisations for arrangements to be made for the Census form to be completed through means other than the standard Census form; these requests could not be accommodated.

The volume of calls to the dedicated 'local-rate' Helpline far exceeded anticipated volumes, especially before Census day. The publicity and enumerator delivery strategy may have led householders to believe that delivery of their Census form was imminent when the policy was to complete delivery by Census day. To meet the demand the number of lines and advisers were increased and most callers were able to get through.

Recruitment of over 8000 temporary field staff ran fairly smoothly. Levels of applications for posts were generally as expected, but there were localised problems in some urban areas. Had more field staff been required then the recruitment problems in urban areas would have been increasingly difficult to overcome.

Payments to the field staff were within budget, and the vast majority of payments were on time. However, GROS recognises that the pay scheme adopted for 2001 was overly complex.

Although there is a legal requirement for everybody in Scotland to be included in the census, some people will be missed. A Census Coverage Survey was held shortly after the Census to measure the number and characteristics of those missed. The survey managed to obtain a response rate of 95 per cent. Research has shown that this level of response will allow the 'One Number Census process' to accurately augment the census database to include the number and characteristics of those missed.

2.1 Public Awareness and Support

General Publicity Campaign

The aims of the Publicity campaign were to:

- raise public awareness of the Census;
- inform the public why the Census was so important to them personally;
- assure the public the Census was impartial, non-political, and confidential; and
- persuade the public to return completed Census forms

These aims became the subject of a number of key messages, where necessary adapted and developed to inform particular groups of people.

The Scottish Publicity Campaign for the 2001 Census comprised of paid-for advertising in nearly all print and broadcast outlets, and supporting editorial coverage gained by supplying suitable stories and leads plus a comprehensive package of background material. In addition leaflets and posters were produced to highlight the assistance available, aimed mainly at disabled, disadvantaged and ethnic minority groups.

The publicity messages were simple and easily understood by people at every level. The campaign also had its own clearly Scottish identity yet was complementary to ONS publicity which would be seen in Scotland.

Advertising was contracted to Barkers Scotland, one of the agencies retained by the Scottish Executive Media and Communications Group. Responsibility for public relations, along with the integration of paid-for and free publicity in Scotland, plus liaison with the publicity organisations of the Office for National Statistics and the Northern Ireland Statistics and Research Agency, was contracted to Craig Lindsay Communications.

The full-scale publicity campaign was launched, by the Registrar General, at a News Conference in Edinburgh on 8 March attended by the First Minister, Deputy First Minister and the leaders of the other main political parties. This highlighted the non-political nature of the Census.

There were three distinct phases to the paid-for advertising -Awareness-raising, Delivery of forms, and Postback of forms. These themes were emphasised in

television, radio, newspaper, magazine and billboard advertising. The awareness-raising adverts ran for a week from the end of March on their own before the delivery advert kicked in: both then ran concurrently until Census Day, when the postback adverts began. Reaction of the public to the advertising was very positive and only a few critical comments were received.

Other elements used to build awareness were:

- Schools Census Project;
- Print media briefings;
- Briefings for MSPs, MPs, and MEPs;
- Media training for Census Area Managers (CAMs);
- General Publicity leaflet placed in public areas, waiting rooms, etc;
- Publicity leaflet for ethnic communities in 6 main minority languages;
- The GROS Website widened to include comprehensive information about the 2001 Census;
- Employers' Mailshot; Scotland's top 500 employers were provided with information on the Census for use in their staff publications;
- A Census storyline broadcast nationally in 'Coronation Street' (an ONS initiative).

CAMs were encouraged to use material produced centrally for generating interest in their local areas, as well as developing their own material and events. The aim was for the CAMs to establish themselves as the Census personality in their area, and to brief GROS on their local plans, mainly in order to assess whether any local initiatives merited wider use. Overall this split of responsibility worked very well.

In light of the outbreak of foot and mouth disease in early 2001 a review was undertaken to decide whether to proceed with the Census. It was agreed to proceed and GROS devised a post-out scheme to allay fears and minimise the risk that Census field staff might contribute to the spread of the disease yet still enable all householders to participate in the Census. The scheme was agreed with the National Farmers Union for Scotland, the Scottish Landowners Federation and the Scottish Crofters Union and received their full support. In addition, the Registrar General visited the affected areas to meet people dealing with the crisis, meet local Census field staff, and meet the local media. This generated much useful coverage in local media and early criticism of why the Census was proceeding despite the outbreak of Foot and Mouth disease and the postponement of the General Election, faded away very quickly.

Overall, we believe the media strategy worked very well. Precise measurements can not be taken easily to measure the effectiveness of the campaign. However, evidence has come in from various sources to indicate clearly that by the time enumerators were out delivering forms the vast majority of householders were well aware of the 2001 Census and what was required of them. Possibly the best indication of success was the very large number of calls to the Census Helpline long before 29 April, mainly from people who wanted to make sure they would receive a form.

Community Liaison

A Community Liaison Initiative was launched by GROS to make contact with minority and community groups to:

- Promote and raise awareness of the 2001 Census;
- Provide reassurance about the aims of the Census;
- Encourage participation; and
- Identify ways of providing assistance with form completion.

The initiative was also aimed at groups which were thought to have been undercounted in 1991 Census; the very elderly, young adults, and people in ethnic communities.

The GROS strategy was to ensure that arrangements were in place for assistance with form completion, mainly to be provided by existing groups within the community, as well as by Census field staff. A two pronged approach was adopted; GROS contacted groups at a national level to pave the way for subsequent contact at local level by Area Managers.

Through the initiative a large number of supporting materials and documents were produced and well received.

- Interpreter services. The 4 main cities had associated interpreter services which Area Managers could access through the Community Liaison Officer at the local authority or directly. In the event, the use of interpreter services was minimal; this may have been due to Area Managers making use of other contacts with ethnic groups or using enumerators with ethnic language ability.
- Translation leaflets – these translations of the census questions were produced in the 6 ethnic minority languages; Arabic, Bengali, Chinese, Hindi, Punjabi and Urdu. There was also a Gaelic version.
- Publicity leaflet for ethnic communities in 6 main minority languages.
- Braille version of the Information leaflet and the Census form – these were produced by, and to a quantity advised by, RNIB.
- Large print version of the English translation leaflet – this was produced in the print size recommended by RNIB.
- Talking Tapes – two tapes were produced for distribution via the Scottish Talking Newspapers group. The first gave a general overview of the Census and the questions, the second help available to people with sight impairment.
- A census promotion video ‘Count me in’ was produced with sub-titles.
- Dedicated helpline for the hard of hearing.
- Dedicated helpline for those whose first language was not English.

However, there was strong feeling from within the RNIB that consultation had begun too late and that the arrangements that had been made did not go far enough to ensure that the needs of the visually impaired had been catered for. Gaelic and Scots groups raised similar concerns.

GROS also formally contacted local councils and asked them to appoint Census Liaison Officers who would be a point of contact for Area Managers. The feedback showed that this part of the initiative had mixed success. Given that local councils provide many of the services for those groups the initiative was aimed at, there is a clear need to review this important aspect of the strategy of spreading awareness of the Census.

To assist Area Managers, GROS set up a database of organisations and names of contacts which had offered to assist in the Census. However, immediately before Area Managers started their community liaison work, GROS should probably have done more to help initiate contact with the local groups. The Area Managers put a lot of effort into seeking out local groups, giving talks and presentations, distributing posters, getting articles into local papers and slots on local radio.

Feedback indicated that Area Managers were particularly successful in engaging home helps, house wardens and housing agencies in spreading awareness about the Census and assisting with completion of Census forms. But the initiative was somewhat less successful in engaging various ethnic groups. Refugees were also difficult to contact and convince to complete a form; they tended not see the census as pertinent to them. This is an important area and GROS will need to carefully review the strategy for spreading awareness and alleviating anxieties in these communities.

Census Helpline

The Census Offices outsourced this function to Cable & Wireless Communications (C&W). C&W sub-contracted the operation to their associates, Broadsystem Ltd. Although this was a UK contract, there was a separate number for Scotland.

The Helpline numbers were local rate numbers, and were printed on the Census forms and the accompanying leaflets. Estimates of call volumes and likely patterns were provided to the contractor as part of the planning. The GROS estimate was that 23,000 calls would be received; this was some 4 times the number that had been received in 1991. In the event, we received 170,000 Scottish calls, and 60 per cent of these were before Census day! To meet this demand the number of lines and advisers were increased and most callers were eventually able to get through.

The publicity and enumerator delivery strategy may have led householders to believe that delivery of the Census form was imminent when the policy was to complete delivery by Census day. In addition, GROS believe that a significant number of the 170,000 calls were repeated calls, because callers were unable to speak to an advisor at the first attempt.

Many callers were frustrated at not being able to get through to the Helpline and, as a consequence, called GROS direct; this stretched the limited (and unplanned) resources available to deal with this type of enquiry.

The Helpline included a mix of advisors to help answer callers' enquiries and also Interactive Voice Response (IVR) to deal automatically with straightforward enquiries such as requests for additional or replacement forms.

Many more callers than anticipated asked to speak to an adviser, even though some of the requests were the sort of routine requests the IVR mechanism had been set up to handle. This was due, to some extent, to technical deficiencies in the IVR system. However, GROS is of the view that IVR facilities should again be used, although a longer, more robust testing period should be allowed for technical malfunctions to be rectified. In addition, developments in IVR technology should be utilised to speed up the routing of callers to their required option.

On a daily basis, the Helpline forwarded to the field staff, details of the requests for forms and assistance received from the public. There were some problems in the actual operation of this fulfilment procedure but, overall, it was a success and is probably worth repeating.

A Language Helpline for those members of the public whose first language was not English was set up. This Helpline received 3,344 calls, of which 3075 were answered successfully. In addition, a Gaelic Helpline was set up.

Comun Na Gaidhlig (CNAG) were used by Cable & Wireless to provide the service. This Helpline handled 157 calls.

A Text phone for the Deaf Helpline was set up. The number was also shown on the Census form, beneath the main Helpline number. This Helpline received a remarkably high 120,091 calls throughout the UK, of which only 9692 were successfully answered. We think that many of the calls may have been from non-deaf callers who, frustrated at trying unsuccessfully to get through to the main Census Helpline, called the Deaf Helpline.

Whilst it had been decided that, given the current state of computer access in society, a general provision for electronic completion of forms would offer poor value for money in 2001, a proposal to provide a Telephone Data Capture (TDC) service was included as an optional requirement in the contract. The GROS view was that the TDC service should only be provided as a last resort and, in the event, only 34 requests for this service were received all successfully transcribed by the Helpline. Demand for electronic completion of forms will increase as access to the internet widens and GROS will carry out a full review of E-completion options before any future next census.

2.2 Managing the Field Operation

Planning the Geography

GROS pioneered postcode based, census geography data management in Britain and has used postcodes as building bricks for the collection, processing and presentation

of population statistics for more than 25 years. Unit postcodes are the basis for the creation of Enumeration Districts - a grouping of households for Enumeration. Key components of the GROS geography system are the Royal Mail Postal Address File (PAF) and Ordnance Survey (OS) large-scale topography, the Landline mapping background. Receipt of quarterly PAF updates triggers the in-house processing required to add new postcodes, delete redundant ones and update changes to postcodes.

Enumeration Districts (EDs) were planned as aggregations of whole postcodes to an agreed target household value, with due allowance for non-residential properties. With postback, the feeling was that Enumerators could be given substantially larger Enumeration Districts than in 1991 because there would be much less work to do in the collection of forms.

The principle underpinning the ED planning process was that workloads should be equal. In order to ensure this, account was taken of the nature of the ED (urban or rural, urban 'easy' or urban difficult), of the perimeter size of the ED (the larger the perimeter, the fewer the households allocated for enumeration) and the accessibility of the properties within it (for example, an ED would not contain properties on either side of a mountain range or other physical barriers without a means of crossing them). In addition, there was a shape criteria - compact where possible.

In 'easy' urban areas, the planning target was 400 households per Enumerator; in the more difficult urban areas, the target was 300.

After the EDs in each Census Area were planned, a total of 175 Census Districts were created as accumulations of EDs.

Enumerators were provided with maps of their Enumeration Districts. Clarity of detail, readability and scale standards were set. Each Enumerator map contained not only the boundary of the ED but also the boundary of each postcode within the ED. Enumerators were also supplied with pre-listed address lists based on the PAF to remove much of the drudgery of having to manually list each address encountered. However, enumerators were instructed that the key driver was the map, and all additional households found during enumeration were added to the address lists.

In total, nearly 12,000 maps were provided for the 7000 Enumerators.

Feedback from the field staff was generally positive, both about the address lists and the maps although there were significant reports of inaccuracies in the address lists (duplicate/multiple addresses, out-of-date addresses etc). In addition, in rural areas it is difficult to order the addresses, which often don't have street numbers, into a logical order for the Enumerator. The main problem with the maps was the lack of detail in rural maps. In addition, field managers wanted copies of their Enumerators' maps – something we had not budgeted for and did not provide. There was also some criticism that Enumerator maps were produced too late. GROS policy was to produce

the maps as late as possible, in time for Enumerator appointment at the beginning of April 2001, so that they would be as up-to-date as possible. Field managers, however, would have liked to have had these maps earlier.

GROS will be looking at these issues for any future similar exercise. There were very few complaints about ED size and structure, except for some minor replanning required in remote areas.

Field Structure

22 Area Managers were appointed in September 2000. Most of these covered whole local council areas, although there were 3 in Glasgow and 2 in Edinburgh. Some covered more than one council area. Area managers, who worked closely with GROS and with local councils, were responsible for the promotion of the census within their areas, for recruiting their District Managers and for general management and co-ordination throughout the enumeration.

Each Area Manager had up to 8 District Managers, each responsible for the management of the enumeration in a Census District. Each District Manager had 3 Team Leaders, each responsible for ensuring that quality standards amongst their 13-14 enumerators were being met during enumeration.

In all, there were 175 District Managers, 525 Team Leaders and 7,000 Enumerators. With 2 reserve Enumerators for each census district, together with a small number of ancillary grades, the total number of temporary field staff exceeded 8,000.

Management Information

It was vital for GROS and for field managers to receive timely and accurate information about the progress of the field operation so that if action had to be taken, centrally or locally, it can be done quickly and effectively.

To achieve this, GROS designed and developed a Field Management Information System (FMIS) providing progress against key milestones covering recruitment of field staff, and delivery and return of Census forms.

Area Managers were provided with PCs with word processing and spreadsheet facilities and with E-mail connectivity. A printer was also provided. The FMIS comprised a series of formatted reports which were to be submitted by Area Managers on specified key dates during the field operation. In addition, a telephone data entry (TDE) system was developed to enable District Managers to make their reports to their Area Managers. District Managers received their information from their Team leaders, usually by telephone who, in turn, obtained it from their team of Enumerators.

The system worked very well on the whole. Although there were teething troubles with the TDE system, these were ironed out after a short time and the system operated quite smoothly during the key stages of enumeration. Enumerators were required to

report progress to their Team Leaders by 8pm on the appointed day. Team leaders were required to pass the aggregated information to their District Managers by 10pm. District Managers, using the TDE system, reported to Area Managers by 9am the following day and Area Managers reported to GROS by noon. This meant that the senior field managers and GROS had a complete regional and national picture of progress within about 18 hours of 7,000 Enumerators making their reports. This enabled weak spots to be identified quickly and corrective action proposals considered and implemented timeously.

Generally, the system was well received by the field staff (although many felt that there were too many reports) and worked very well. A similar system, utilising the best, least risky, available technologies, will be required in a future census.

2.3 Logistics

The logistical aspects of supplying the public and the field staff with the required documents and materials for a census are considerable. Millions of public and administrative forms, pre-paid envelopes, leaflets, maps, carrying bags, pens etc. have to be designed, printed or produced and distributed, in the proper quantities, at the right time, often to 7,000 distribution points.

Printing of public forms

The numbers of public forms printed for Scotland was based on intelligence from the 1991 Census and other sources and was as follows:

Household Forms (H4)	2,650,000
Continuation Forms (HC4)	55,000
Individual Forms (I4)	350,000
Communal Establishment Forms (CE4)	22,500
Dummy Forms (D2)	510,000

Quality control measures were put in place to monitor the forms, as they were being printed, for any deviation in quality. Some severe “creasing” of the forms was identified. The damage did not affect the scanning process and 8,000 forms were replaced without charge. No further problems were reported.

Despite late design changes as a result of decisions taken by the Scottish Parliament, forms were printed by the due date in July 2000. Contingencies were available to cover any major supply problems but some form shortages did occur. Whilst quantities of the main forms were sufficient to cover the expected demand it was necessary to arrange reprints of Individual forms, once strategic reserves had been exhausted, due to acute shortages in some areas and insufficient stock levels held by GROS. GROS will need to review formulae for calculating quantities in any future conventional census.

GROS introduced stringent quality control methods during the printing of the address lists and pre-paid return envelopes, which were unique to each enumeration district.

Supplying the field

A Distribution and Collection contract was awarded to TNT.

The volume of material to be distributed to the field led to the logical decision to spread this over a number of supplies. Additionally, it made sense to time supplies to coincide with events in the field. An additional supply had to be arranged following the outbreak of Foot and Mouth Disease. Once items and quantities had been determined for each supply, the data was used to produce Picking and Packing lists to guide the contractors in assembling the items for each delivery point.

An electronic distribution chart, based on Enumeration District planning information, was produced as an aid for District Managers to distribute onwards down to ED level.

Linking distribution to field events worked well and, given the volume of material and number of delivery points, TNT generally handled the operation well and supplies were delivered timeously.

Collection of material after the census was in two phases, the first to uplift completed Census forms for transportation to the Processing site in Wigan and the second to uplift other material. Material uplifted in the second stage was either returned to GROS for evaluation purposes or disposed of by the Contractor.

2.4 The Field Staff

Recruitment

22 Area Managers were recruited in August/September 2000. 175 District Managers were recruited in November 2000 and 7,500 Team Leaders and Enumerators were recruited in February and March 2001. The recruitment scheme and all necessary documentation were produced by GROS.

The main recruitment vehicle was newspaper adverts. Apart from the main Scottish broadsheets, many local newspapers were used and, in order to seek applications from all communities, these included ethnic community newspapers. For the non-management posts, free newspapers were also used.

Jobcentres carried adverts for the posts, as did libraries, community centres and post offices. In-house journals and circulars in local authorities, civil service, chambers of commerce, race equality councils, retirement organisations and others were notified about the posts and asked to advertise them.

Jobcentres were generally extremely helpful, not only in advertising posts but also in handling application forms and in allowing their premises to be used for interviews.

One difficulty which did surface during the stage where District Managers were interviewing candidates for Team Leader and Enumerator posts was that many felt uncomfortable interviewing candidates alone. Although some local discretion was given to work in pairs, there are clearly some areas where this would not be possible and we may have to consider how to introduce formal dual interviewing arrangements in a future similar exercise.

Did we get the right people? It is difficult to assess, particularly since direct contact with the field force by GROS tended to be through Area Managers. At that level, we were well served. We had a committed team, experienced in large project management and with the requisite interpersonal and technical skills. Moreover, we had no resignations at that level which was a very important factor in building and maintaining team morale. Some indication of quality can be inferred from the ratio of applications to posts. At all levels above Enumerators, applications were several times the posts available and the greater choice offered at these levels should be an indicator of reasonably good quality.

At Enumerator level, we had 13,000 applications for 7,000 posts but the pattern was patchy throughout Scotland. In some of the urban areas in the central belt, it was sometimes difficult to get the number of applications to match the number of posts so choice on selection was restricted. It is arguable, therefore, that some enumerators may have reached less than the desired standards although this is not to fail to recognise that many of the best enumerators were also operating in these areas.

Although turnover was relatively modest overall (3 per cent at Team leader and Enumerator level), resignations tended to occur in the urban areas and reserves were quickly used up. Had we not had postback, we could not have recruited sufficient enumerators without a substantial increase in costs.

In any future Census, the Enumerator recruitment strategy, particularly in the urban central belt, needs to be reviewed with a view to encouraging more applications. Moreover, the approach to recruiting from ethnic communities needs to be reviewed; few applications were received and only one (of 175) District Managers and 56 (of 7,000) Enumerators were appointed.

Training

GROS made a very heavy investment in training to ensure that the temporary field force was properly equipped at all levels with the knowledge and skills necessary to enable them to carry out their Census duties in the most consistent and effective way.

Like recruitment, training was cascaded with Area Managers being trained directly by GROS staff. Area Managers trained their District Managers who, in turn, trained their

Team Leaders and, with Team leader help, their Enumerators. GROS produced the training scheme and briefs that could be augmented locally.

Training was staggered for all field grades so that particular sessions covered only those tasks that were required to be performed before the next training session. The training took place over an extended time period. The first of 4 Area Manager training session was held in September 2000 and the last of 3 Enumerator training session was held around Census day. The training was complemented by a comprehensive set of instructions for each field grade.

Main features of the training were use of professionally produced videos, distance learning, role-playing and interaction between trainers and trainees.

Feedback from the field staff indicates that the overwhelming majority found the training and instructions to be well structured, pertinent and clear and that the style of training would work well for a future census.

Pay

Field staff pay is one of the biggest single items in the cost of a census. For 2001, the Scottish budget was some £7m.

For 2001, the UK payroll contract was outsourced to Chessington Computer Services Limited (CCSL). The operation of a payroll for 80,000 temporary staff (in the UK) at several different grades, based on a 'work done to date' principle, is extremely complex.

In determining the pay scheme, GROS had to balance the necessities of, on the one hand, getting the job done and, on the other, protecting public expenditure. Payment at all grades was based on a standard fee for a standard time taken to do the job, based on experience from Census tests. It was not based on the hours actually worked since to do so would be an open-ended expenditure commitment. At Enumerator level, the knowledge that some areas are more difficult to enumerate than others is recognised by allocating smaller workloads in those areas. In addition, rural workloads tend to be smaller than urban workloads to compensate for the greater time requiring to be spent travelling. These measures were taken to ensure, as far as possible, equality across all Enumerators to justify payment of a single standard fee.

The only piece of Enumeration work that could not be standard, and could not be equalised across Enumerators, was follow-up of households where Census forms had not been posted back. It was impossible to predict what proportion would be posted back in every Enumeration District and, consequently, the number of addresses to be re-visited during this stage would vary very substantially throughout the country. In devising a piece-rate payment for this element of the work, GROS was recognising that the greater the number of addresses to be re-visited, the greater should be the fee earned. Otherwise, there would be little incentive to re-visit in areas of poor postal response.

In addition, the pay scheme had to recognise that temporary staff could not be expected to wait until the end of their contracts to be paid their fees. For this reason, payment at all levels was staged on the principle of 'work done to date'. In addition, provision was made for additional payments to be made to those whose efforts were deemed, by their field managers, to be especially deserving. Each additional payment was authorised by GROS staff. In addition, fee enhancements of 10 per cent were made at all levels in recognition of key milestones being reached successfully (for example, completion of recruitment), or where the work involved was significantly greater than we had envisaged at the outset.

The scheme was that all claim forms had to be authorised and submitted by Census District Managers to the payroll contractor.

Whilst there were a considerable number of problems in getting everyone paid on time, the payroll was within budget and the overwhelming majority (93 per cent in the case of the 7,000 Enumerators) were paid on time. This, however, meant that several hundred people did not get paid on time and GROS takes responsibility for the sometimes unacceptable delays in achieving full payment to everyone. Late payments were due to a number of factors such as late submission of claims, errors made in claims and, sometimes, to a breakdown in the payment system.

In the majority of cases of payment delay, GROS recognised the difficulties that late payment could cause some staff and a policy of paying advances was developed. Advances were then deducted when the claim proper fell to be paid. In a small number of cases, overpayments occurred and the majority of these have been successfully recovered.

In looking ahead to any future census, GROS recognises that the pay scheme adopted for 2001, together with the documentation, was overly complex. Moreover, it may be that there are insufficient operational benefits from the economies of scale to be gained from participating in a UK contract. For these reasons, GROS is committed to a thorough review of comparative payment systems with a view to simplifying the pay process so that all staff are paid the correct amounts due to them at the correct time.

2.5 The Enumeration

Pre-Enumeration

Census District Managers carried out a check of their Census Districts between 28 November and 15 December 2000. The purposes of the Check were to familiarise themselves with their area, make contact with managers of Communal Establishments (CEs), and to identify local circumstances which might cause difficulty at enumeration; sound local knowledge would also help with the allocation of particular Enumerators to particular EDs.

The knowledge acquired during the Check, together with information, obtained from liaison with local police and other local organisations, expanded on the information provided by Census HQ and enabled CDMs to develop to better prepare Enumerators for the difficulties they might encounter in particular areas.

Delivery of forms

Delivery of Census forms was divided into two phases. During phase one (9 – 20 April), the Enumerator's job, armed with a map and a list of known addresses, was to find all the places in their ED where people lived, including places not on their address lists, to try to make contact to establish the number of households in each dwelling and to deliver a Census Form to each. In phase two (21-27 April), enumerators re-visited those addresses where they had not been able to make contact at the first phase. If Enumerators were unable to make contact at the second visit, they left a form addressed to 'The Occupier', and a return envelope.

Two attempts were made because past experience had shown that we were more likely to get a response when Enumerators were able to contact someone when delivering Census forms. Moreover, a second visit increased the opportunities for Enumerators to provide the correct forms and to help householders who may have had anxieties about completing the form or who suffered from physical or other difficulties which might affect their ability to complete the form.

Census Team Leaders accompanied each of their Enumerators during part of the Delivery to ensure that the proper 'doorstep routine' was being followed, so ensuring a standard approach throughout the whole country.

By 27 April (2 days before Census day), management records show that delivery was complete in 99 per cent of EDs. More than 2.3m forms (99.2 per cent of our estimate of the number required) had been delivered. There were only 75 EDs where delivery was still underway and delivery in these areas was completed by census day.

Generally, delivery was very successful but probably too long (23 days). The national publicity campaign, together with the fact that Enumerators left a calling card if they failed to make contact at the first visit, created an expectation in the public mind that delivery of their Census forms was imminent. As already stated, this led to many thousands of calls to the Census Helpline from people who had not received their Census form.

To help ensure that the correct forms are easily identified and issued, some enumerators commented that further use of colour coding of the public forms and various reminder notes should be considered.

In some limited circumstances, post out of census forms was permitted; these were where access was restricted because of foot and mouth disease and, as a last resort, when there were genuine fears for field staff safety.

Return of forms

Census forms were to be posted back to Royal Mail delivery offices, located in Census Districts. Enumerators were to call back to householders who had not returned a form by 9 May. This was the first time that postback had been used in a UK Census. A 1997 Census Test showed that there was little difference in response rates or in data quality whether forms were posted back or collected by Enumerators. Importantly, using postback saved substantially on Enumerators (7,000 in 2001; 15,000 in 1991) and lessened the very clear risk that we would be unable to recruit sufficient enumerators, especially in urban areas. Moreover, it allowed a higher ratio of Enumerators to households in the more difficult enumeration areas.

Starting on Monday 30th April (the day after Census day), managers collected Census envelopes, which had been manually sorted to Enumeration District by Royal Mail, daily from the delivery offices and passed them to Enumerators to open, sort the forms and record. Enumerators also checked forms for completeness. From 9 May, Enumerators called back to addresses from which a completed form had not been received. The estimate, on which field workloads had been based, was that 70 per cent of forms would be posted back before Enumerator follow-up was to begin on 9 May. We had a contingency for as low as 50 per cent being posted back by that date. In fact, 72 per cent were posted back by that date but considerable difficulty was caused by nearly half of these arriving on that day!

Enumerators made many nugatory visits to collect census forms which had not come through the system but which householders were adamant had been posted. Although by 21 May, when Enumerators were due to complete their work, management reports from the field indicated that some 97 per cent of forms expected back had been returned there were a number of areas, particularly urban areas, where response was substantially lower. Some Enumerators were retained in these areas for an additional week to try to collect the outstanding forms.

The knock-on effect of the extra work meant that Enumerators and field managers found it very difficult to find the time to properly reconcile the numbers and types of forms received per ED (an important point when the forms came to be processed – see section 2.8) and many quite large administrative errors were found, although we are confident that all forms returned or collected in the field were duly transported to the processing site.

The overall impression gained from management reports and direct feedback from field staff, is that insufficient time was allowed at key stages. If postback is used again, a more realistic assessment of posting patterns and mail throughput times needs to be taken. Generally, a longer period needs to be allowed for the postback, follow-up and reconciliation stages, although this would impact detrimentally on any post-Census quality and coverage survey which requires to be held almost immediately after the census to minimise the risk of selected households moving away.

Overall postback can be regarded as a success with 91 per cent of forms received being posted back, far exceeding expectations. However, there were considerable problems operationally which will need to be addressed for any future Census. The GROS view is that Royal Mail probably underestimated the size and complexity of the Census task and the ability of some of their Mail Centres to cope with manual sorts of this volume in the timescales provided.

In future it is likely that there will be more options for selecting a postal service provider and key to the selection will be their ability to cope with the large volumes of mail over a short timescale whilst providing the required levels of automatic sortation in an accurate and consistent manner. Also key will be their ability to have flexible contingency plans which can be implemented swiftly.

The ability of service providers to meet these demands will be key to a decision on whether local or central postback will be used in the future. As has already been said a decision on this is needed early to allow proper operational and contingency planning both for the Census Offices and the service provider.

The effect of postback on data quality cannot be judged at the time of writing this report and an assessment will feature in the Quality of Census Results section.

2.6 Non-compliance

Completion of a census form is a legal obligation. In any particular census, there will, however, be those who refuse to comply. In dealing with these cases, the main aim was to obtain a completed census form rather than to ensure prosecution.

For 'refusals' to be successfully prosecuted, a complicated and time-consuming process had to be undertaken by field managers to ensure that the necessary documentary evidence was in place. This involves warning letters pointing out the legal obligation, extra visits, and the taking, witnessing and signing of an interview 'under caution' in which the refusal is admitted by the person responsible for completing the form. Potential refusals are allowed legal representation at this interview which can complicate the process further. Moreover, contact with potential refusals can be extremely difficult and this can make identification of the person responsible for completion of the form very difficult. As noted above, in carrying out the various steps in this non-compliance process, the emphasis is on getting a completed form rather than achieving a prosecution. Nevertheless, successful prosecutions can act as a deterrent for 'refusals' in the future.

In the 2001 Census, given the difficulties experienced in mail throughput, a major difficulty was in distinguishing those from whom a completed Census form had not been received because of deliberate refusal from those whose form was merely stuck in the post.

By the time the enumeration finished, and enumerators handed over completed census forms to their Team Leaders, they were instructed to record as 'refusals' any household from which a completed form was expected but not received. This resulted in field managers, already overloaded with trying to retain and manage as many staff as possible for a last push round non-responding addresses, being overloaded with many thousands of cases, making it impossible to cope in terms of attempting to make contact to arrange interviews under caution and to carry out such interviews so that the required documentary evidence for subsequent possible prosecution could be in place. In many of these cases, the completed form was, in any case, subsequently found to have been delayed in the post.

In the event, only 14 cases were considered strong enough, in terms of identification and supporting evidence, to be considered for prosecution. 8 were forwarded to Procurators Fiscal and 3 were successfully prosecuted. Of the remainder, 1 case resulted in a census form being completed and 4 were not proceeded with for various reasons.

Clearly, the value of the entire process needs to be re-assessed and the procedures for identifying and prosecuting non-compliers need to be overhauled and simplified.

2.7 The Census Coverage Survey

It was estimated that the 1991 Census achieved a 98 per cent response rate. However a key problem was that of differential enumeration of different types of people. In some urban areas, up to 20 per cent of young males may have been missed by the 1991 Census. Therefore the One Number Census was initiated to devise a methodology to measure and account for under enumeration and for the Census database to be fully adjusted at an individual level to allow for under enumeration.

The Census Coverage Survey (CCS) was designed to collect the information to allow the Census database to be adjusted. By matching the people found by the Census and the CCS, extra people found only by the CCS can be characterised. The results for people missed by the Census in survey postcodes are extrapolated to all postcodes. This methodology required that the CCS was carried out independently of the Census.

The Sample Design

The UK was divided into 'Design Groups' of about 500,000 population. Research at ONS indicated that a sample size of about 300,000 households for England and Wales would provide a relative error of around 1 per cent for the total population of a Design Group. Each Design Group (England and Wales had 101 design groups) would have a sample of about 3,000 households. The standard error of a Design Group of 500,000 population would have, on average, a standard error of 5,000 people. In Scotland, there were 8 design groups. The target sample size was slightly larger to accommodate a number of small local authorities within Design Groups, so the sample included 40,000 households.

To satisfy the statistical design, the CCS objective was to achieve over 90 per cent sample coverage of households, which also allowed for some sample wastage (e.g. demolished or vacated properties). The data from the CCS could then be used to determine the level and characteristics of under enumeration in the Census throughout Scotland.

The Census Coverage Survey had the following key features:

- CCS Interviewers visited about 40,000 properties, in about 2,400 postcodes.
- The Interviewers attempted to interview every household in the selected postcodes.
- The CCS was designed to produce direct estimates for each of 8 Estimation Areas of about 625,000 people.
- Some increases in sample size were made in small local authorities to ensure some model response to local conditions.
- The CCS sample took account of the expected difficulty of enumeration based on 1991 experience.

The survey collected person data on name, date of birth, marital status, whether a student and term time address, ethnic group, activity last week and whether same address 1 year ago. The survey collected household data on type of accommodation, whether self-contained, tenure and landlord.

Taking the Survey

The Survey procedures were tested extensively between 1997 and 2000. A full rehearsal of all procedures was carried out shortly after the 1999 Census Rehearsal.

The survey employed some 550 temporary field staff. Permanent members of GROS staff carried out the recruitment with help from field staff.

Survey Hierarchy:

- 5 Field managers
- 32 Team Managers - about 6 per Field Manager
- 412 Interviewers - about 13 per Team Manager
- 32 Team Manager Assistants
- 1 Translator/Interviewer
- 64 Stand-by Interviewers

The recruitment began in December 2000 and interest was well above expectation.

A cascading training approach was adopted which was well received by field staff, although some of the more detailed points could have been handled better through reference manuals only. In addition, some field staff felt that the administrative pay and recruitment procedures were over burdensome.

The Fieldwork period started 4 weeks after the Census and lasted a further 4 weeks from 24 May to 20 June. The field work period started as soon as the Census follow-up was finished and was completed as quickly as possible to minimise the number of people who moved but allow residents to be contacted even if they had taken a short holiday.

Before carrying out the interviews, all properties within the sample postcodes were identified. Interviewers were not given address lists, instead they used high quality maps with postcode boundaries clearly delineated -though they had to check the postcode boundary with households who lived just outside of the selected postcodes.

Once all properties had been identified, interviewers were then required to identify and interview every household within those properties. The questionnaire and interview were designed to take 5 to 10 minutes to complete. In order to maximise the number of interviews achieved, avoiding refusals and optimal calling strategies were reinforced throughout training. Interviewers were instructed to make up to 14 attempts at achieving an interview.

In the final few days of fieldwork every residential property, where no interview had been obtained, was revisited by management and HQ staff. If no contact was made, a post back form and information leaflet was left -many households responded positively.

Team working was supported with stand-by Interviewers and Assistant Team Managers, Field Managers and HQ staff and the weekly team meetings. Management information was provided every Tuesday for the position on Sunday night - this gave the management team time to respond for the following weekend.

In areas affected by foot-and-mouth disease, telephone procedures, in consultation with the SNFU and local field staff, were devised. There was no indication of a poorer response from areas afflicted by Foot and Mouth disease or precautions.

Due to the extended Census follow-up, the fieldwork was extended in Glasgow for a week to increase the response rate.

Survey Results

The survey achieved an estimated 95 per cent response rate with about a 2.2 per cent refusal and 2.7 per cent non-contact rate. In Glasgow and Edinburgh a response rate of over 90 per cent was achieved. No Estimation Area had a response rate below 90 per cent. The post-back exercise accounted for about 2 per cent of the response rate.

Some of the key features that ensured the success of the survey were:

- The high quality training of Team Managers and their consequent commitment to the task and public duty.
- The resources available for Interviewer training.
- The weekly team meetings.

- The Team Manager Assistants who performed quality assurance tasks leaving the Team Manager time to manage.
- Constant and over-riding support on safety issues.
- Strong HQ and field liaison.

2.8 Census Processing

The review of Census Processing is scheduled for release in January 2003.