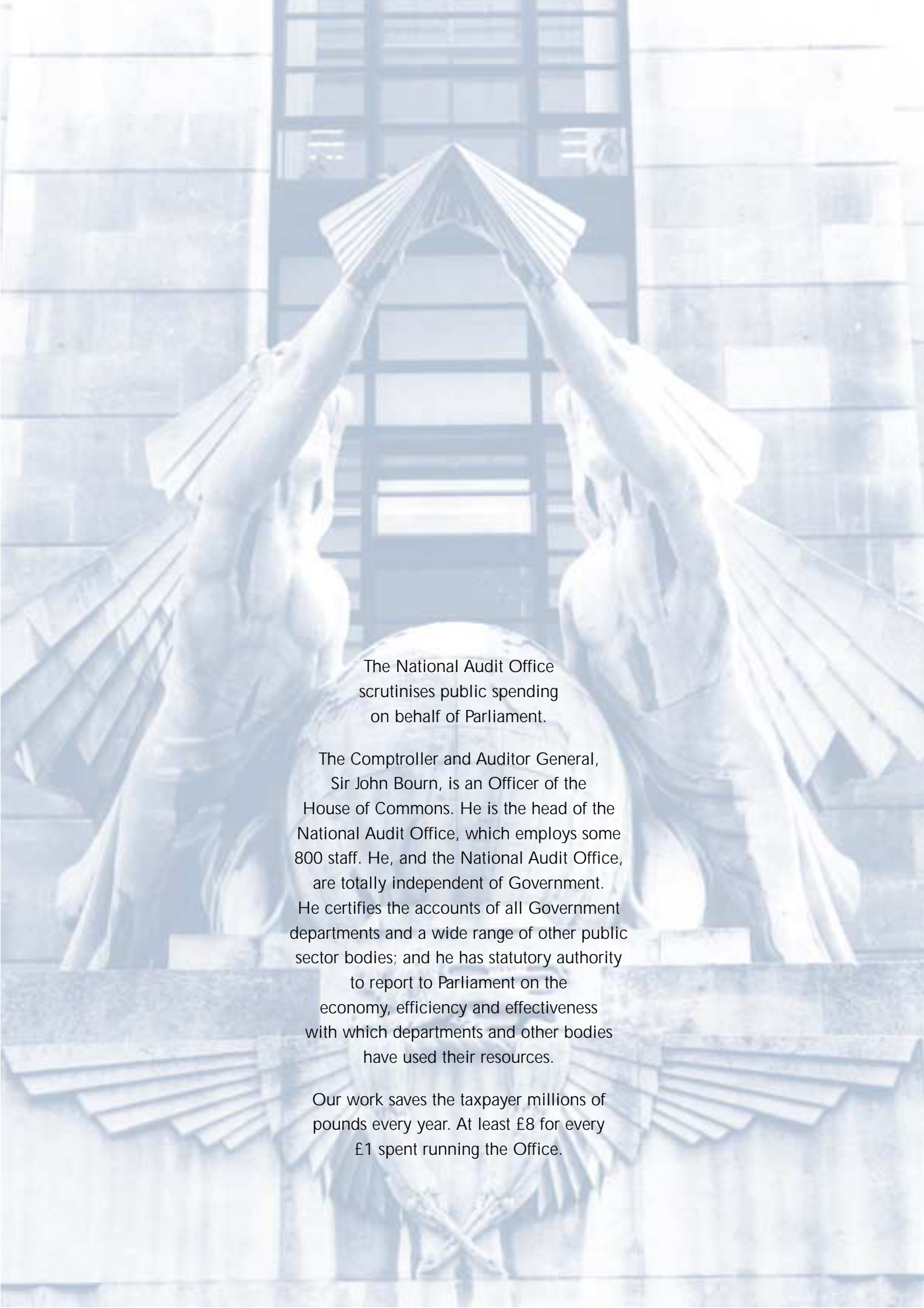


Identifying and Tracking Livestock in England

REPORT BY THE COMPTROLLER AND AUDITOR GENERAL
HC 1144 Session 2002-2003: 12 November 2003





The National Audit Office
scrutinises public spending
on behalf of Parliament.

The Comptroller and Auditor General,
Sir John Bourn, is an Officer of the
House of Commons. He is the head of the
National Audit Office, which employs some
800 staff. He, and the National Audit Office,
are totally independent of Government.
He certifies the accounts of all Government
departments and a wide range of other public
sector bodies; and he has statutory authority
to report to Parliament on the
economy, efficiency and effectiveness
with which departments and other bodies
have used their resources.

Our work saves the taxpayer millions of
pounds every year. At least £8 for every
£1 spent running the Office.

Identifying and Tracking Livestock in England



REPORT BY THE COMPTROLLER AND AUDITOR GENERAL
HC 1144 Session 2002-2003: 12 November 2003

This report has been prepared under Section 6 of the National Audit Act 1983 for presentation to the House of Commons in accordance with Section 9 of the Act.

John Bourn National Audit Office
Comptroller and Auditor General 10 November 2003

The National Audit Office study team consisted of:

Ian Derbyshire, Chris Shapcott, Helen Rodgers, Phil Millar and Dereck Ferguson under the direction of Joe Cavanagh

This report can be found on the National Audit Office web site at www.nao.gov.uk

For further information about the National Audit Office please contact:

National Audit Office
Press Office
157-197 Buckingham Palace Road
Victoria
London
SW1W 9SP

Tel: 020 7798 7400

Email: enquiries@nao.gsi.gov.uk

Photograph acknowledgements:

Cover, Title and Contents pages and pages 2-3, 4 (pigs), 6-7 (cattle and pigs), 8, 31
Photographs by: Mike Lomas ©

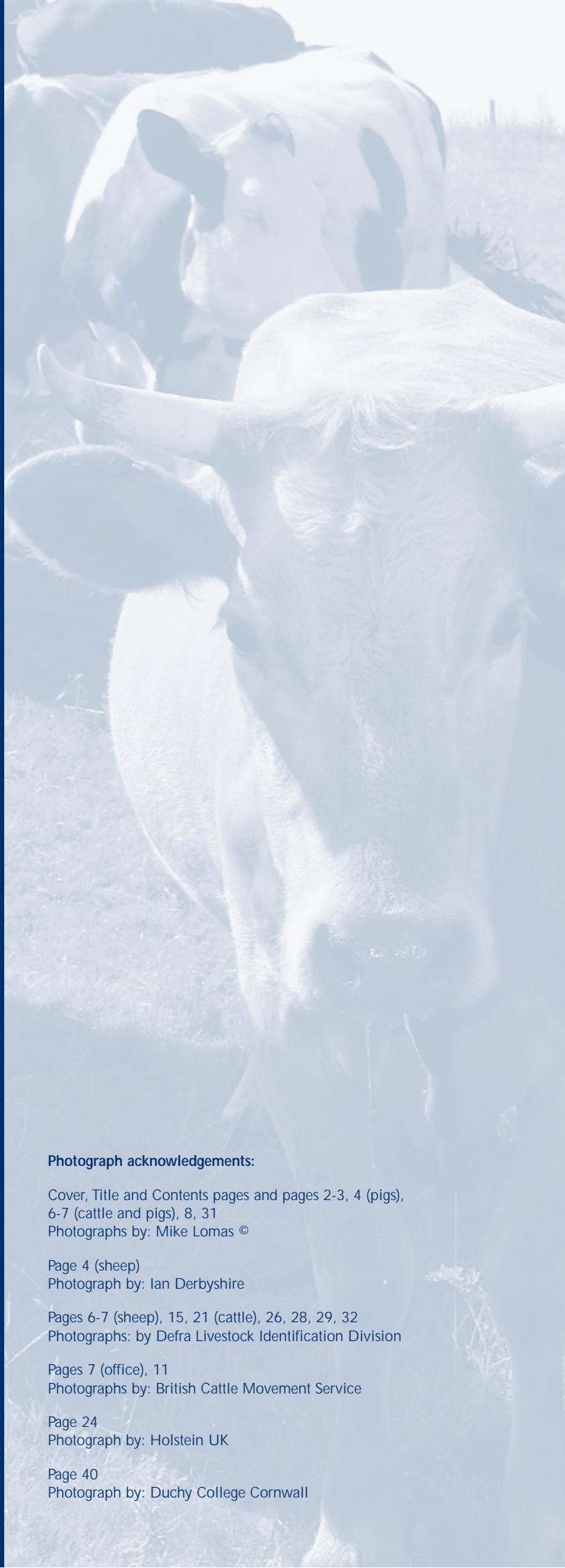
Page 4 (sheep)
Photograph by: Ian Derbyshire

Pages 6-7 (sheep), 15, 21 (cattle), 26, 28, 29, 32
Photographs: by Defra Livestock Identification Division

Pages 7 (office), 11
Photographs by: British Cattle Movement Service

Page 24
Photograph by: Holstein UK

Page 40
Photograph by: Duchy College Cornwall



Contents

Executive Summary

The initial objectives of the Cattle Tracing System have been met and the identification and tracking of sheep and pigs has improved, but there is more that could be done	2
Plans for new systems are ambitious, but risks are being actively managed	5
Recommendations	6

Part 1

Introduction

Livestock identification and tracking offers important benefits	9
Systems have evolved in response to key developments	10
The Department shares its responsibility with various agencies	11
Livestock identification and tracking costs over £55 million a year	12
Further change is likely	12
Our study issues and methods	12

Part 2

The initial objectives of the Cattle Tracing System have been met but there is still more that it could do

The Cattle Tracing System has several objectives	13
Consumption of beef has recovered and the incidence of BSE has declined	14
The accuracy, completeness, timeliness and efficiency of the Cattle Tracing System can still be improved	20

Part 3

Identification and tracking of sheep and pigs has improved

Sheep and pigs present particular challenges for identification and tracking	27
The Department responded to problems revealed by the foot and mouth outbreak by introducing the Animal Movements Licensing System	28
The identification and tracking of sheep and pigs is still developing	29

Part 4

Plans for new systems are ambitious, but risks are being actively managed

Better systems are needed to meet Department and stakeholder objectives	33
The Department aims to address key weaknesses of current systems through an ambitious Livestock Identification and Tracing Programme	34
The Programme is high risk, but the Department is seeking to manage these risks	35

Appendices

1. Methodology	41
2. The Government's response to earlier recommendations on livestock identification	42
3. Key findings of NOP World Research	44
4. Stakeholder views	46
5. Animal identification and tracking in other countries	48

executive summary

- 1 Identifying the 25 million cattle, sheep and pigs in England and tracking their movements costs government and the livestock industry around £55 million a year - just over £2 an animal. Its purpose is to safeguard human and animal health, assist control of farming subsidies and improve the industry's commercial performance (Figure 1). Livestock identification and tracking will also contribute to the developing Animal Health and Welfare Strategy of the Department for Environment, Food and Rural Affairs (the Department) and the Devolved Administrations, which is a key part of the Government response to the independent inquiries into the foot and mouth disease outbreak in 2001. This Report examines the progress made by the Department in implementing livestock identification and tracking in England for the most commercially important livestock species - cattle, sheep and pigs.

1 Principal benefits of livestock identification and tracking

Livestock tracking provides a range of potential benefits to government and stakeholders



Improving administration of subsidy payments

Protecting human and animal health



Improving the industry's commercial performance

Source: National Audit Office

- 2 Differences between the species have led to development of two main systems of livestock identification and tracking in England:
 - All **cattle** must be individually identified and 'keepers' (owners and others responsible for livestock) must report each animal's birth, movements and death to the Department's British Cattle Movement Service (the Service) for recording on the **Cattle Tracing System** (the System), a computer system covering the whole of Great Britain. The Service also issues 'passports' for each animal.
 - **Sheep** born from 2003 must be individually identified but **pigs** need not. Most sheep and pig movements must be reported to local authorities for recording on the **Animal Movements Licensing System**, a computer system covering England and Wales set up by the Department after the 2001 outbreak of foot and mouth disease. Cattle movements are reported via a link with the Cattle Tracing System.
- 3 The Department and local authorities check compliance with these systems by, for example, inspecting farms and markets, and checks against farmers' subsidy claims. The Department's development of these systems, and its efforts to improve them with technology, have been carried out against the background of often poor infrastructure in rural areas, low farm incomes and computer usage, and a tradition in the industry of looking to government to provide and subsidise technological developments required by the demands of modern food, farming and animal welfare regulation.

The initial objectives of the Cattle Tracing System have been met and the identification and tracking of sheep and pigs has improved, but there is more that could be done

- 4 The Cattle Tracing System and associated cattle passports have played an important part in the measures taken since 1996 to protect the public from Bovine Spongiform Encephalopathy (BSE). Beef consumption has recovered to pre-1996 levels, the United Kingdom (UK) is permitted to export beef under the Date-based Export Scheme, and the number of BSE cases in Britain fell from nearly 37,000 in 1992 to around 1,000 in 2002. However, the Cattle Tracing System does not yet deliver all that it might in fighting other cattle diseases. In part, this has been because the System was developed separately from the Department's veterinary computer systems, and the Department plans to improve its information technology (IT) systems to make it easier for vets to use the System.
- 5 The Animal Movements Licensing System has not been tested by a serious disease outbreak, but the industry considers it robust, and to have improved the information available at markets to trace animal movements. However, information on both the Cattle Tracing System and the Animal Movements Licensing System is inevitably not fully up-to-date because of the time lag between a movement taking place and it being reported.
- 6 Keepers of cattle can apply to the Service for an official link to be created between parcels of land managed as a single unit. If this is agreed, they need not report cattle movements between these parcels to the Cattle Tracing System, although movements must still be recorded in farm records and in the event of an outbreak of a notifiable disease all of these 'linked holdings' would be subject to disease control restrictions. This system of 'linked holdings' reduces the reporting burden for keepers, but some 'linked holdings' involve land many miles apart. There are 7,000 such linked holdings, with 1.3 million cattle, and a similar concession is allowed within the Animal Movements Licensing System.





- 7 The Cattle Tracing System was not originally intended to be used to check claims for European Union Common Agricultural Policy subsidies, but since January 2000 the European Union has required Member States to use their national cattle databases for this purpose. The Cattle Tracing System has been used to cross-check cattle subsidy claims since 1999, but its use was initially limited because until January 2001 the System did not cover cattle born before 1996. As a result, the European Commission imposed a penalty of £14 million because its requirement could not be complied with fully for claims relating to 2000.
- 8 Checks on claims relating to 2001 initially identified discrepancies in 15 per cent of claims, many the result of incorrect information provided to and held on the System. Due to the time taken to resolve discrepancies, two-fifths of the 260,000 valid claims received for 2001 were not paid in full until after the original target date of 30 June 2002. The Department has agreed to pay farmers almost £0.4 million in compensation where it was responsible for late payments, and the European Commission may impose penalties for claims for 2001 that were not paid in full until after the Commission's extended deadline of 31 August 2002.
- 9 The contribution of the systems to achieving the full benefits of livestock identification and tracking is limited by several factors:
 - In England, most keepers report information by post, although e-mail and web-based alternatives are available. Cattle keepers are allowed three days to report a movement to the Service, which under European Union legislation is the shortest period the Department can stipulate, but a fifth of movements are still notified late. This limits the use that can be made of the Cattle Tracing System to control fast-moving diseases, like foot and mouth disease, for which real-time data is needed, although the System was of value during the 2001 outbreak to support logistics. Movements that are reported electronically are on the System within 24 hours of notification. Most English markets use electronic reporting, but in Northern Ireland and Scotland all do, ensuring that a greater proportion of movements are captured quickly.
 - Some information held on the Cattle Tracing System is inaccurate: movement records for one in eight animals are incomplete and the current location of two per cent of animals is uncertain. Key reasons for this inaccuracy are:
 - Information submitted by keepers by post and e-mail often contains errors. For example, a quarter of postal applications for cattle passports include an error or gap, compared to only one per cent of applications received through the Internet service (CTS Online), which automatically checks information at the time of submission so that incomplete or clearly erroneous information cannot be sent.
 - Notifications of movements are often incomplete. Keepers bringing cattle to their holding must report to the Service that the cattle have arrived, but need only record where the animal has come from in their farm records. For animals leaving their holding, they report the animals' departure, but not the destination. This has resulted in large numbers of incomplete histories (anomalies) for animals on the Cattle Tracing System, when one part of a movement is not reported by one of the keepers.

- Until 2003, the Service took the view that its top priority was to cleanse and process accurately and quickly birth and registration information submitted by keepers, which was critical to meeting the original animal health objectives of the System. Resolving errors in movement information was given lower priority, resulting in 1.7 million unresolved movement anomalies accumulating by the end of 2002. Following the establishment of special teams within the Service to give greater priority to resolving anomalies, this figure had been reduced by September 2003 to 1.2 million - some three per cent of the 44 million movements reported to date. The Service plans to introduce before the end of 2003 statements for keepers to make it easier for them to check the identification and location details recorded on the System for their animals.
- The inaccuracy of the information received by and held on the Cattle Tracing System increases costs. A review in 2000 estimated that two-thirds of staff time was employed in correcting errors. In 2003, staff numbers, at around 700, are more than 50 per cent above the level the Service estimated in 2000 it would require.
- The Cattle Tracing System was developed quickly with the primary objective of providing the database of cattle movements required by the European Union for controlling BSE. The Department did not consider it practicable in the time available to provide for other potential benefits, such as improved targeting of veterinary and welfare inspection visits, and control of live animal exports and imports. It was envisaged that other features, such as satisfying stakeholder aspirations for design features that would help the industry, would be added later. But the pressure of events, such as the 2001 outbreak of foot and mouth disease, and new requirements, such as the introduction of subsidy cross-checks, have limited the progress that could be made.



- 10** The Animal Movements Licensing System costs £4 million a year to operate. A large proportion of these costs are for data capture and validation by local authorities of data provided by keepers on paper movement notifications. Local authority staff also take the lead in enforcing identification and tracking regulations for sheep and pigs. In contrast, Scotland's equivalent to the Animal Movements Licensing System relies mainly on electronic data transfer for data capture and validation, to one small central unit, significantly reducing the time and effort required to get information onto the system. The Department plans to introduce a facility for electronic data transfer from markets and slaughterhouses in late 2003-04.

Plans for new systems are ambitious, but risks are being actively managed

- 11** The Department is in the process of updating the Cattle Tracing System because it has serious technical limitations and is increasingly unreliable. New and better systems are needed also to achieve planned economies in the administration of subsidies and support other key initiatives. Updating of the Animal Movements Licensing System may also be required as a result of a draft Regulation published in December 2002 by the European Commission to require the movements of individual sheep to be recorded.
- 12** The Department is implementing these changes under a 'Livestock Identification and Tracing Programme'. This will replace or improve the Department's existing livestock tracking computer systems, culminating in the bringing together into a single Livestock Register of information held currently in separate livestock tracking, veterinary and subsidy computer systems. The Programme would also provide scope to introduce electronic methods of identifying animals in due course, if this is justified by business benefits or required by the European Union. The Department's initial estimates are that, for sheep, electronic identification set-up costs for farmers, markets and slaughterhouses could be around £45 million, with a further £45 million a year in running costs for fitting electronic identifiers on lambs.
- 13** The Programme is recognised by the Department as a 'Mission Critical Programme' and its successful implementation presents significant challenges. The Programme is being delivered through a number of projects, each subject to separate scrutiny and approval. The first projects, to improve the Cattle Tracing System and Animal Movements Licensing System, have been approved, while only pilot work on electronic identification has been approved until agreement has been reached on the European Commission's proposals for the tracking of individual sheep.
- 14** The Department has set up a high-level design authority to coordinate strategic decisions upon which the Programme and other projects will depend. The Programme and its component projects are being managed through the Office of Government Commerce's Gateway process. This process ensures that risks to delivery are systematically considered and key causes of project failure are addressed. It is too early to assess the likely outcome of the Programme, but independent Gateway reviews of constituent projects have found them to be well managed. However, important technical issues remain to be resolved, the business case for electronic identification has yet to be fully developed, and both the Department and many in the farming industry do not see the European Commission's December 2002 proposals on sheep as practicable.



Recommendations

- 15 The level of inaccuracy and continued use of non-electronic methods of information transmission reduce the effectiveness of livestock tracking and have increased costs to government by at least £15 million a year, for example in staff time correcting errors, postage and European Commission penalties. There is substantial scope for the Department to reduce these costs and it should:

Pending the implementation of the Livestock Identification and Tracing Programme

- 1 Reduce postal notification to the Cattle Tracing System, as quickly as is practicable and consistent with securing delivery of the Livestock Register, by providing and promoting easy to use alternative methods of reporting - such as by telephone - and developing and implementing a strategy for supporting and encouraging keepers changing from postal notification, with the ultimate aim of eliminating postal notification.
- 2 Set targets for the level of errors and gaps in the information held on the Cattle Tracing System; set a timetable for 'cleansing' information held, so as to achieve these targets; and, consult with industry stakeholders to develop an action plan for reducing the level of anomalies and errors in information submitted by keepers.
- 3 Review the use currently made of the exemption from reporting for 'linked holdings'.
- 4 Provide farmers and other keepers with clear and up-to-date guidance on the current animal identification and recording requirements.
- 5 Provide for information submitted to the systems through its e-mail service to undergo automated online validation checks at the time it is submitted, rather than later.



In developing and implementing the Livestock Identification and Tracing Programme

- 6 Encourage markets and slaughterhouses to report (electronically) within 24 hours the sources and destination of all animal movements through them. For other movements, assess the costs and benefits of requiring cattle keepers to report both source and destination of movements.
- 7 Distinguish, in developing the business case for the Programme, between the costs and benefits of the work needed to meet minimum European Union requirements and those of the work needed to provide additional facilities, such as services to improve the industry's commercial performance.
- 8 Continue to involve industry stakeholders fully in its design and governance arrangements so that wider benefits for improving the industry's commercial performance and eliminating duplication of effort are achieved.
- 9 As data capture becomes increasingly electronic, review the need for local authorities to be involved in data entry for movements of sheep and pigs.
- 10 Review the role of the local authorities in enforcing movement and animal health regulations and consider the need for greater coordination or harmonisation of standards, as well as the scope for simplifying the range of enforcement bodies.

In implementing new European Union requirements for sheep

- 11 Coordinate the numbering methods used for livestock tracking with those used for the National Scrapie Plan.



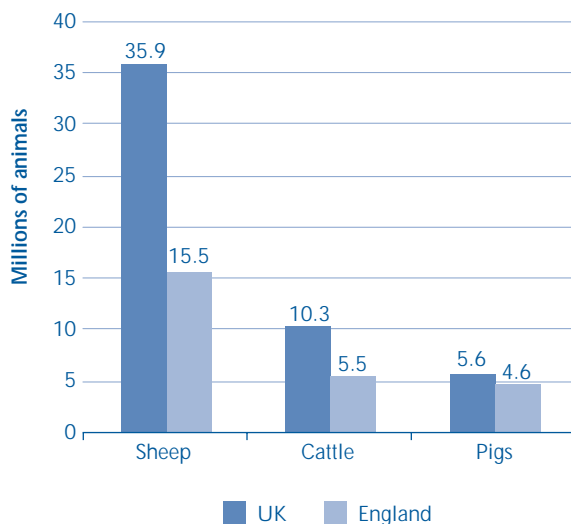
Part 1

Introduction

1.1 The UK's current livestock identification and tracking systems are part of a European Union-wide programme of measures to ensure food hygiene from 'farm to fork'. The ultimate aim is to ensure that consumers can trust the food they eat, with all the results for a sustainable rural economy which that level of confidence produces. Identifying and tracking livestock can also offer benefits to the livestock industry in stock management and trading, and in combating animal diseases. This Part sets out the context within which livestock identification and tracking operates in England and describes the scope and aims of our examination.

2 The UK and English livestock herd in June 2002

The English livestock herd comprises half the UK herd



NOTE

The figures for sheep include 76,000 goats in England and 93,000 in the UK.

Source: Agricultural and Horticultural Census, 5 June 2002

Livestock identification and tracking offers important benefits

- 1.2 The livestock herd in England makes up half the UK herd (**Figure 2**), which is one of the largest in Europe. Each year some 19 million animals, including 9 million pigs, 8 million sheep and 2 million cattle, are added to the English national herd, balanced by a roughly equal number being slaughtered or dying for other reasons. In England, there were around 21 million reported livestock movements in 2002-03.
- 1.3 Identifying and tracking the movements of livestock has potential benefits in:

- **Protecting human and animal health.** Tracking helps control animal diseases, some of which can also affect human health. The costs of these diseases can be huge if they get out of hand. For example, in 2002-03 the Department spent over £700 million on animal disease surveillance and control, while the 2001 outbreak of foot and mouth disease cost Britain over £8 billion.
- **Improved administration of subsidy payments.** Several European Union agricultural subsidies paid to cattle and sheep farmers are based on the number or identity of animals on farms. In England, payments of these subsidies totalled just under £430 million in 2002-03. Accurate tracking of animals is required by the European Union to verify subsidy claims and can help reduce administration costs.
- **Helping consumers.** Identifying and tracking livestock can help in the operation of product assurance schemes, which provide consumers with information and assurance about the origin of meat and other animal products and the methods used to produce them.

- **Helping farmers' businesses.** Especially for cattle, the individual identification of animals can help good farm management, for example to monitor pedigree and breeding performance and inform stock purchase and sale decisions. Traceability can help protect the market for meat by helping to maintain consumer confidence. The European Union made implementation of an effective cattle tracing system a precondition for allowing beef exports to be resumed after the BSE crisis.
- **Other potential benefits** include, for government, providing livestock data as an alternative to a census and helping the targeting of visits to farms.

Systems have evolved in response to key developments

1.4 The first requirement to identify cattle was introduced in Great Britain in 1953 as part of efforts to eradicate bovine tuberculosis. Since 1960, all farmers have been required to keep a record of all movements of animals on or off their premises, and events since then have prompted further developments:

- During the early 1970s, severe outbreaks of swine vesicular disease led to the introduction of reporting requirements and movement control restrictions for pigs.
- In the 1990s, concern over the potential impact of BSE in cattle on human health prompted improvements in cattle identification and tracking. These improvements included the introduction in the UK of passports for individual cattle in July 1996 and a computerised Cattle Tracing System in Great Britain in September 1998, as part of the establishment of a European Union cattle identification regime.
- Databases set up under this regime, like the Cattle Tracing System in Great Britain, were never expected to serve as control systems for epidemic diseases, such as foot and mouth disease. The 2001 outbreak of the disease highlighted ways in which existing tracking systems could be improved to assist in controlling fast-moving diseases, which led to changes in movement reporting requirements for cattle and the creation of an Animal Movements Licensing System to control and record all batch movements of sheep and pigs, and to issue movement licences during a disease emergency.
- Several authoritative reports, including by the Committee of Public Accounts¹, the Agriculture, Fisheries and Food Select Committee, the January 2002 report of the *Policy Commission on the*

Future of Farming and Food (the Curry report) and the July 2002 report of the *Foot and Mouth Disease: Lessons to be Learned Inquiry* have recommended improvements (see Appendix 2). Some recommendations have still to be implemented, but there is a programme for implementation.

- The European Union has taken a leading role in setting requirements for livestock identification and tracking in Member States, especially since the early 1990s.

1.5 As a result of these developments and different industry practices, current identification and tracking systems in the UK aim to provide the following capabilities:

- For **cattle**, to identify and to track the movements of all animals individually.
- For **sheep and goats**, to identify individually all animals and to track the movements of all animals on a batch basis only.
- For **pigs**, to track the movements of all animals on a batch basis, without identifying animals individually.

These arrangements are described in more detail in the rest of this Report.

1.6 The Department's development of livestock identification and tracking systems, and its efforts to improve them with technology, have been carried out against the background of several factors:

- The current systems for all species rely mainly on traditional written, postal methods, reflecting the industry's setting in rural, sometimes remote, areas, where infrastructure of utilities and transport can be poor.
- Many farmers do not use computer technology. The December 2002 Survey of Agriculture in England found that 47 per cent of cattle and sheep farms, and 29 per cent of pig and poultry farms did not have a computer, and around half of the remainder had access to a computer but did not use it in their business.
- Since 1994, average net incomes for livestock farmers have been unusually low. According to the Department's statistics, lowland sheep and cattle farms registered negative net farm incomes in 2000 and 2001, although there was recovery to £8,000 in 2002, with a further rise forecast for 2003.
- Traditionally, the agricultural industry has looked to government to provide and subsidise developments in technology required by the demands of modern food, farming and animal welfare regulation.

¹ BSE: *The Cost of a Crisis (PAC 34th Report, 1998-99)*, Ministry of Agriculture, Fisheries and Food: *The Sheep Annual Premium Scheme in England (PAC 38th Report, 1999-2000)* and *The 2001 Outbreak of Foot and Mouth Disease (PAC 5th Report, 2002-03)*.

The Department shares its responsibility with various agencies

1.7 The Department's main responsibilities are:

- In consultation with the Devolved Administrations, to represent UK interests at the international level, in particular within the European Union.
- To put in place effective and efficient arrangements for livestock identification and tracking in England, in particular by making regulations imposing obligations on keepers.

Policy in England is led by the Department's Livestock Identification Division, which is part of the Department's Animal Health and Welfare Directorate.

1.8 The Department shares responsibility for ensuring that keepers of animals comply with livestock identification and tracking requirements with other public bodies:

- The **British Cattle Movement Service**, which in April 2003 merged with the Rural Payments Agency, operates the Cattle Tracing System from a site at Workington, Cumbria. The System covers the whole of Great Britain and the Service has a management board on which the Department and the Scottish and Welsh Devolved Administrations are all represented.
- The **Rural Payments Agency**, an executive agency of the Department, inspects farms to check compliance with the identification and record-keeping requirements for cattle and sheep, and to check claims for subsidy payments.

- The Department's **State Veterinary Service** and private vets working under contract to the State Veterinary Service carry out welfare, surveillance and disease control visits to farms that involve some checks on animal identities.
- **Local authorities**, normally the Trading Standards Departments, are responsible for animal health and welfare in their areas, including controls over the movement of animals to counter disease, and for prosecutions. They are responsible for checking that keepers of animals in their areas comply with the requirements for livestock identification and records, carrying out checks at markets, farms and slaughterhouses. Some local authorities use a specialist Animal Health Department because of the volume of work involved.
- The **Meat Hygiene Service**, an executive agency of the Food Standards Agency, provides a supervision and inspection facility in licensed slaughterhouses throughout Great Britain to protect public health, animal health and welfare. It supervises slaughterhouses to ensure that the plant operator's checks on identity and age are being carried out. The Meat Hygiene Service also carries out checks on the health and welfare condition of animals killed at slaughterhouses.
- **Port Health Authorities**, working with the State Veterinary Service, enforce controls on the import and export of animals, including checking that documentation is provided to identify animals and their origin.



The British Cattle Movement Service office at Workington

Livestock identification and tracking costs over £55 million a year

1.9 The Department carries out detailed impact assessments when any policy is proposed or reviewed, but does not record on an ongoing basis the total cost of livestock identification and tracking. However, our calculations suggest that it exceeds £55 million a year for England, comprising two main elements:

- Government spends around £30 million a year. The main element of spending is the British Cattle Movement Service, which employs over 700 staff. The Department also reimburses local authorities for some of their costs of monitoring and enforcement, for example providing £4 million a year for their work on the Animal Movements Licensing System.
- Keepers spend around £25 million a year. This includes the direct cost of eartags, spray paint, tattoos and applicators to identify their animals, and indirect costs, for example from record keeping. There are also costs for markets and slaughterhouses.

Further change is likely

1.10 Requirements for livestock identification and tracking have changed radically since the early 1990s, often under acute time pressure resulting from the need to deal urgently with the problems posed by major animal disease outbreaks, especially BSE and subsequently foot and mouth disease. As a result, requirements are complicated and differ among species of animals within the national herd and flock.

1.11 In addition:

- The European Commission proposes to introduce tracking of the movements of individual sheep and goats, and electronic methods of identifying sheep and goats in stages between 2003 and 2006. European Union Agriculture Ministers are considering these proposals, and a decision is possible in late 2003 or early 2004.
- The Department is developing a new Livestock Identification and Tracing Programme, incorporating an improved Cattle Tracing System, to introduce better capabilities and links with the Department's other IT systems.

- Following its merger with the Rural Payments Agency, the British Cattle Movement Service has developed a Corporate Plan for 2003-04 to 2005-06 whose key focus is to continue to improve Cattle Tracing System data quality. A programme of work, building on existing plans, is being worked up to achieve the high level of data quality required to meet both animal health and subsidy requirements.
- In July 2003, the Department and the Devolved Administrations published an outline of an Animal Health and Welfare Strategy for Great Britain for consultation. A final strategy will be launched in Spring 2004 and is a key part of the Government's response to the independent inquiries into the foot and mouth disease outbreak in 2001. The strategy provides a 10-year vision for animal health and welfare, setting out the roles and responsibilities of the key players, including livestock keepers, in improving further health and welfare standards in the livestock industry, whilst striking a balance between the costs and benefits of intervention. Livestock identification and tracking contribute to the Strategy and the Cattle Tracing System and Animal Movements Licensing System will provide data for a proposed Rapid Analysis and Detection of Animal-related Risk (RADAR) surveillance IT system.

Our study issues and methods

1.12 Against this background, we examined the progress made by the Department in implementing livestock identification and tracking in England, focusing on:

- operation and effectiveness of the Cattle Tracing System (Part 2 of this Report);
- performance of the systems for identifying and tracking sheep and pigs (Part 3); and
- the Department's plans and preparations for a more integrated and comprehensive system (Part 4).

1.13 Our examination followed up relevant aspects of recent reports by the Committee of Public Accounts. We did not examine identification and tracking of other species, such as horses and pets, or other animal health measures such as movement restrictions or controls at ports. Appendix 1 describes our methods. The main body of fieldwork was carried out between October 2002 and April 2003.

Part 2

The initial objectives of the Cattle Tracing System have been met but there is still more that it could do

2.1 **Figure 3** summarises the current identification and tracking requirements for cattle. This Part examines the operation of these arrangements, focusing on:

- the objectives of the Cattle Tracing System;
- how far these objectives are being achieved; and
- why these objectives are not being fully realised.

The Cattle Tracing System has several objectives

The System's objectives have developed over time

2.2 The March 1996 government announcement that BSE in cattle might be transmissible to humans led to a crisis of consumer confidence in beef and the imposition of a ban by the European Union on UK beef exports. In June 1996, the European Union Council set as a precondition for the resumption of exports that the UK should have 'an

effective animal identification and movement recording system'. The Department implemented this requirement almost immediately, introducing cattle passports in July 1996 for animals born from this date, with animals' movements being recorded on their passports.

2.3 In April 1997, under Regulation 820/97, the European Commission introduced a requirement for all Member States to set up a rigorous cattle registration and tracing regime and to establish by the end of 1999 'fully operational' computerised national databases of the identity and movements of cattle. This required the extension of the existing cattle registration system to introduce tracing, the redesign of business processes and the establishment of a new, central, national database. To implement these changes, the Department announced in July 1997 that a 'Foundation' Cattle Tracing System would be launched within a year, and the System came into operation in September 1998. The 'Foundation' System did not seek to realise all of the potential benefits of a more developed system immediately and it was envisaged that it would be enhanced later.

3 Livestock identification and tracking arrangements for cattle

The British Cattle Movement Service plays a central role in the operation of cattle tracing

On identification:

- All cattle must be individually identified by means of an approved tag in each ear, both bearing a number allocated by the Department to uniquely identify the animal. Cattle keepers must also have either an official 'passport' or a certificate of registration (depending on the age of the animal) for each animal on their holding. This includes details of its eartag number, age, sex, breed, identification number of its mother, and current and past ownership. Keepers must tag all calves within 20 days of birth or before they leave the holding of birth, whichever is sooner, and apply for a passport within a further seven days.

On tracking:

- Keepers must report every birth, movement or death of individual animals to the British Cattle Movement Service, which operates the Cattle Tracing System. The British Cattle Movement Service issues cattle passports, and records the location and identity of all cattle in Great Britain.
- The British Cattle Movement Service passes information on the movement of cattle to the Department's Animal Movements Licensing System for use by local authorities to check compliance with movement restrictions that have been in force since the 2001 foot and mouth disease outbreak. The British Cattle Movement Service also coordinates on-the-spot inspections of cattle, their paperwork and farm records as required by both European Union animal health and subsidy legislation.

Source: National Audit Office

2.4 As well as helping to re-establish confidence in beef and implement European requirements, the Department expected the Cattle Tracing System to provide benefits from the more efficient tracing of animals in the event of disease, one of the principal objectives being the easier and quicker location of the offspring of BSE-affected cattle. Other benefits were expected in improved targeting of veterinary and welfare inspection visits, and control over live animal exports and imports. Subsidy control was not foreseen as a major driver at the time, but became another significant aim of the System in 2000.

The Department's British Cattle Movement Service operates the System

2.5 The British Cattle Movement Service issues cattle passports and receives notifications from keepers of the birth, movements and death of all cattle in Britain. It records for each animal: its date of birth, breed, gender, mother, keeper and location. Notifications can be sent by post, by e-mail and, since February 2001, directly over the web using CTS Online. There is also a call centre, which started life by providing helpdesk support to keepers, but which is now capable of dealing with up to 90 per cent of the customer contacts it receives before the end of the call. **Figure 4** illustrates how cattle tracing works.

2.6 Keepers need to identify their animals for their own purposes, and to maintain the on-farm records required by national animal health legislation and European Union subsidy rules, and the eartags and numbers required by the Cattle Tracing System are used widely by keepers as a secure means of identification. However, although the British Cattle Movement Service has sought to minimise burdens on keepers, some keepers may be tempted not to comply with the System to avoid the extra work that cattle identification and tracing for a central national system inevitably creates, for example in reporting cattle movements. In addition, there can be commercial advantages for keepers in deliberately contravening identification and tracing requirements, for example to increase the sale value of an animal by misstating its age or breed.

2.7 The Department has therefore established controls and incentives to make sure that keepers operate cattle identification and tracing correctly. These include:

- Inspection by the Department of 10 per cent of farms every year to check that animals are correctly identified and the required records are being kept. These checks are combined with on-farm checks of subsidy entitlement, to minimise regulatory burdens and the cost of the Department's overall programme of on-farm inspections.

- Cross-checks, required by the European Union, between information held on the Cattle Tracing System and that supplied on claims for European Union Common Agricultural Policy subsidies, with payment being withheld if there are discrepancies.

- Operators of markets and slaughterhouses can only accept animals if they are correctly identified with official eartags and accompanied by their passports, which must match. Inspectors of the Meat Hygiene Service ensure that slaughterhouse plant operators comply with the legal requirements for the identification and age of animals presented at slaughterhouses. The first part of this check is made from the passport, the second from the animal's teeth.

- Checks by the British Cattle Movement Service on information received from keepers to confirm that it is consistent with information already held.

- Local authority Trading Standards or Animal Health Departments carry out checks on cattle identification and records in their programme of farm audits and inspections at markets and of animals in transit. They work closely with Animal Health Offices and the British Cattle Movement Service on welfare issues which often involve non-compliance with the identification regulations.

Consumption of beef has recovered and the incidence of BSE has declined

2.8 Cattle identification and tracing has a key role in many of the measures to control BSE. For example:

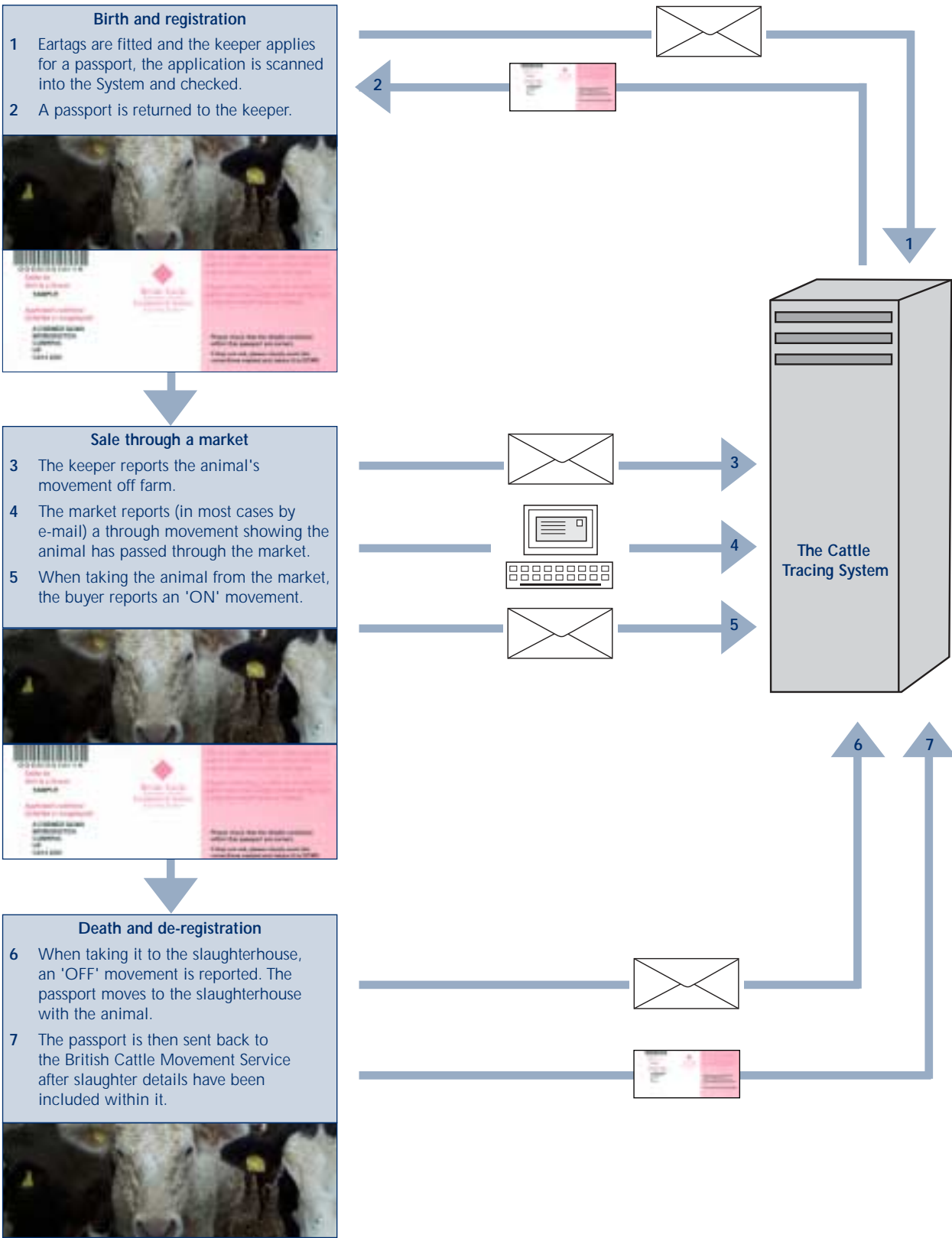
- The **Over Thirty Months Rule** currently bans cattle over 30 months old from entering the food chain, except, under the Beef Assurance Scheme, for animals from certain specialist extensively-reared beef herds which have no history of BSE. As described in paragraph 2.7 above, Meat Hygiene Service staff use eartags and cattle passports to help ensure that only animals no more than 30 months of age enter the food chain.

- Under the **BSE Offspring Cull**, all calves born after 1 August 1996 to cows confirmed with BSE must be slaughtered and cannot be used for human consumption. The Cattle Tracing System helps in tracing these offspring.

- The Cattle Tracing System is one of eight databases used to assess whether an animal is eligible as a source for meat export under the **Date-based Export Scheme**.

4 How cattle tracing works

Cattle births, movements and deaths are notified by post, electronically and by phone



NOTE

This figure shows how the Cattle Tracing System works in a typical case involving postal notifications. However, increasingly keepers are using CTS Online to register births, and notify movements electronically, over the Internet.

Source: National Audit Office

- 2.9 In response to the Department's measures, the number of cases of BSE in cattle in Great Britain has declined from nearly 37,000 in 1992 to around 1,000 in 2002. UK beef consumption has returned to pre-1996 levels, although domestic market share fell (Figure 5) in 2001 and 2002 as a result of the foot and mouth disease outbreak. In June 2003, the Department sent a report to the European Commission arguing that the UK should be considered as a BSE moderate risk country, in line with other Member States.
- 2.10 In July 2003, the Food Standards Agency advised Ministers that it would be acceptable on public health grounds to replace the Over Thirty Months Rule with BSE testing of cattle older than 30 months in two stages, provided that Ministers were satisfied that the necessary arrangements had been made and funding being guaranteed for enforcement of the controls that would replace the Over Thirty Months Rule (principally BSE testing). Such a change would result in considerable cost savings. The Cattle Tracing System would also be used to trace animals that may have been exposed to the same feed as BSE-affected animals. European Union legislation would require these animals to be culled if the Over Thirty Months Rule is replaced.
- 2.11 Cattle passports and the Cattle Tracing System helped the export of British beef to restart in August 1999, through the limited exceptions to the export ban allowed in the Date-based Export Scheme. The volume of exports is small - less than 10,000 tonnes in 2002, including beef of foreign origin - partly because of the strict rules for the Scheme for producers and slaughterhouses. In addition, all exports were suspended between February 2001 and September 2002 because of foot and mouth disease. Before the BSE crisis, beef exports averaged over 300,000 tonnes a year and were worth around £650 million.

The Cattle Tracing System contributes to BSE control but cannot yet be used as the only reference point

- 2.12 Cattle passports are used extensively in BSE checks but the Cattle Tracing System computer system was initially used less than might have been expected. One reason was veterinarians' concerns over the accuracy and completeness of data held, particularly for animals born before the Cattle Tracing System came into operation, or born in the early days of the System, when keepers were unfamiliar with the System and their returns to it were prone to error. For example, early experience with the BSE Offspring Cull was that around a fifth of the identification numbers for calves' mothers reported by keepers and shown on the Cattle Tracing System contained errors, although some errors were minor and the latest level of error is much improved (Figure 8). Also, unlike in Northern Ireland (Appendix 5), an animal's disease status is flagged on the Department's

veterinary databases, rather than on the Cattle Tracing System, requiring state vets to use cross-referencing between these databases and the Cattle Tracing System, in conjunction with on-farm records, when tracing the offspring of BSE-affected cattle. The Department plans to address these problems in the improvements in its IT systems examined in Part 4 of this Report.

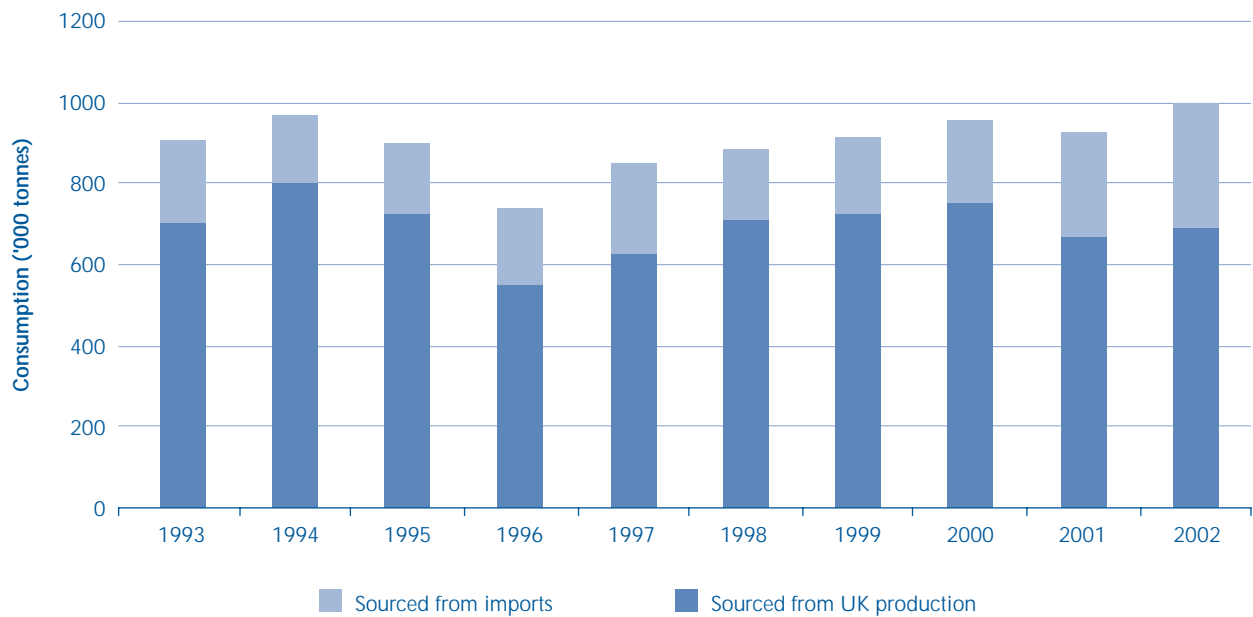
- 2.13 Animals born before 1996 were added to the System after a national cattle census held in September 2000, which has made it easier to establish robust links between every calf born and its mother. However, as many had been bought and sold during their lives, their current owners often could not supply details of their exact date of birth, breed and mother's identity - for example, dates of birth are not known for 334,000 animals. While the fact that these animals had been born before 1996 is recorded to prevent their slaughter for human consumption, gaps in the information held on the System remain.

The Cattle Tracing System does not yet deliver all that it might in fighting other cattle diseases

- 2.14 Since 1996, the two most important diseases affecting the UK cattle herd apart from BSE have been bovine tuberculosis and foot and mouth disease. The number of new cases of bovine tuberculosis found each year has more than quadrupled since the mid-1990s. In 2002, when figures were higher because of a backlog of control work that had built up during the foot and mouth disease outbreak, 23,000 cattle were compulsorily slaughtered because they reacted to the tuberculin tests or were considered direct contacts, and in January 2003, nearly 2,700 (around three per cent of) cattle herds in Britain were under restrictions due to bovine tuberculosis. During 2001, foot and mouth disease affected over 10,000 premises (around seven per cent) with cattle, sheep or pigs in Britain, and 758,000 cattle were slaughtered for disease control and welfare purposes during the outbreak.
- 2.15 A key control against bovine tuberculosis is the regular testing of animals, and, when cases are found, tracing movements to and from a holding since the previous test. The Department anticipated, in its 1996 business case for the Cattle Tracing System, that the System would assist greatly in controlling bovine tuberculosis. In practice, however, whilst vets have used the System regularly to assist with the tracing of bovine tuberculosis cattle, it has not been put to as much use as hoped. In part this has been because the System was developed separately from the Department's veterinary computer system (Vetnet), so that, although since 2001 some information has been transferred between the System and Vetnet, state vets need also to visit farms to check herd registers directly. In contrast, Northern Ireland's Animal and Public Health Information System

5 UK beef consumption: 1993 to 2002

Beef consumption has recovered from 1996, although domestic market share has fallen



Source: Meat and Livestock Commission

(Appendix 5) integrates cattle tracing and veterinary information so that lists of at-risk animals and necessary tests can be generated within minutes of confirmation of a case. The improvements in the Department's IT systems examined in Part 4 of this Report are intended to make information more accessible to vets and to make the System more user-friendly for them and for other occasional users.

2.16 The Cattle Tracing System was of value during the 2001 outbreak of foot and mouth disease to support logistics, for example, in helping to plan the disposal of carcasses, and to support claims for reimbursement from the European Union. The British Cattle Movement Service also lent several hundred staff to help in eradicating the disease and acted as the home of the Department's Foot and Mouth helpline, albeit at the cost of some impact on the Service's development timetable.

2.17 Cattle movement information in the System is inevitably not fully up-to-date because of the time lag between a cattle movement taking place and it being reported to the British Cattle Movement Service. Information can sometimes be five days or more out-of-date as:

- Keepers are required to report movements within three days, which under European Union legislation is the shortest period the Department can stipulate. In practice, as many as a fifth of movements are notified late and around five per cent are reported over five weeks late.

- There is a further delay for delivery of the half of all movements sent by post, though the other half reported by e-mail or over the web arrive much quicker. On receipt by the British Cattle Movement Service, information is normally loaded on the System within 24 hours.

2.18 Because of the time lag between movements being made and reported, the 1996 business case for the Cattle Tracing System recognised that for controlling diseases with short incubation periods, such as foot and mouth disease, movement details would still need to be collected from farms and markets to trace all movements. But the business case anticipated that the Cattle Tracing System 'would still play an important role as tracing has to take place for movements stretching back 30 days'. This would save time and resources spent in tracing by manual methods. In the event, use of the System for movement tracing during the 2001 outbreak of foot and mouth disease was limited, a key factor in this being the level of accessibility for occasional users. The Department's planned IT improvements (Part 4) are intended to make the extraction of information from the System simpler and quicker, especially for vets.

2.19 Some cattle movements that present risks to disease control do not need to be reported. These are movements between parcels of land under the same management control or used for seasonal grazing. As the land is under a single management regime, it is considered to be a single epidemiological unit and all the cattle upon it to have only one health status. Keepers can apply to the Service for such holdings to be 'linked' on the System and, once linked, cattle movements between the parcels of land need not be reported, although they must still be recorded in on-farm records. This reporting exemption was made to reduce the administrative burden on farmers, although a disadvantage to the farmer is that, in the event of an outbreak of a notifiable disease, all the stock on all the linked holdings would be restricted.

2.20 The Department intended that the exemption be restricted to land between which cattle move on a day-to-day basis. However, in practice, it has been extended more widely to reflect the structure of farm businesses and normal animal husbandry practices and to avoid placing unnecessary burdens on keepers. Gloucestershire Trading Standards told us of one cattle dealer they believe to have abused this facility to link 10 holdings spread across six counties. The main holding is an administrative address where cattle are not kept, yet it is where the System shows the cattle as being registered to. The British Cattle Movement Service is pursuing this report. In May 2003, there were over 7,000 links in place on the System between linked holdings, involving 1.3 million cattle.

Differences in the information supplied by farmers to the Cattle Tracing System and on subsidy claims have made cross-checking between them difficult

2.21 The Cattle Tracing System was not intended originally to be used to check claims for European Union Common Agricultural Policy subsidies, though some basic interfaces were built between the System and the Department's cattle subsidy payment systems from 1999. Since January 2000, the European Union has required Member States to use their national cattle databases to check subsidy claims. The System's usefulness for subsidy-checking has, however, been constrained by poor interfaces with the computer systems of the Rural Payments Agency, and its Scottish and Welsh equivalents, although work is underway to now address this. In addition, until completion in January 2001 of the 2000 cattle census, a £13 million exercise to capture identification details for animals born before July 1996, and location details for animals born before September 1998, the System covered fully only the 40 per cent of the herd born since September 1998. Consequently, the Department and the Agency were unable to cross-check fully all claims relating to

2000. Failure to undertake full cross-checks in England resulted in the European Commission penalising the UK £14 million.

2.22 For claims relating to 2001, the Department improved its computer programs and cross-checked claims between April and July 2002. The Rural Payments Agency based a large team at the British Cattle Movement Service to help clear discrepancies identified by the cross-checks, at an additional cost of £4 million. Discrepancies were found initially in claims for one in thirty animals, including 93,000 missing cattle movements, and work on resolving discrepancies continued into 2003. By December 2002 (Figure 6) 15 per cent of claims processed had been rejected or reduced because of discrepancies, with payments to farmers potentially to be cut by £14 million. Farmers challenged these penalties, arguing, for example, that movement cards had been sent to the Service but had not arrived, or that details had been input incorrectly. Following clarification from the Commission on how to treat obvious errors made by keepers on animal registration and movement notifications, the Rural Payments Agency reconsidered and rescinded penalties imposed where information updates by farmers put things right and did not lead to a breach of scheme rules. Eventually, it imposed £7 million of penalties.

2.23 Subsidies cannot be paid fully until all anomalies have been resolved. Consequently, the time taken to resolve discrepancies meant that many farmers were late in receiving final payments. Two-fifths of the 260,000 valid claims received for 2001 were not paid in full until after the original target date of 30 June 2002. The Department has agreed to pay almost £0.4 million in late payment compensation where the delay could be attributed to either the Rural Payments Agency or the British Cattle Movement Service. In recognition of the problems encountered with the cross-checking exercise, the European Commission agreed not to penalise the UK for paying claims after the 30 June deadline provided that they were paid by 31 August 2002, but penalties may be imposed for claims that were not paid in full until after 31 August 2002. The final amount of these penalties will be published in a future Commission Decision.

2.24 The Department cross-checked claims for 2002 against the Cattle Tracing System database on a rolling basis throughout the year. However, difficulties in implementing new European Union procedures for penalising producers that break subsidy rules resulted in delays. In recognition of these difficulties, which were shared by several Member States, the Commission again extended the deadline for making payments, in this case to 31 July. However, despite the Department's efforts to overcome these problems, approximately a fifth of the subsidy claims were not paid in full until after the extended 31 July 2003 payment deadline.

6 Results of cross-checks of 2001 claims: position at December 2002

Checks on subsidy claims during 2002 revealed many discrepancies between the data given to the British Cattle Movement Service and to the Paying Agencies

	Claims			Percentage of claims			
	Number of claims	Number of cattle (million)	Value £m	Paid in full	Reduced	Rejected	Still to be checked
Beef special premium	103,000	1.2	107	86	7	4	3
Extensification payments	29,000	1.1	44	74	1	20	5
Slaughter premium	134,000	1.5	42	76	6	8	10
Suckler cow premium	19,000	0.7	78	47	43	4	6
Overall	285,000	4.5	271	78	8	7	7

NOTE

Excludes 1,400 Veal Calf Premium Scheme claims.

Source: Unaudited data supplied by the Rural Payments Agency

7 The cattle industry's aspirations for identification and tracking

The cattle industry has long held aspirations for an integrated cattle tracing system

<p>1991: Wilson Committee report on animal data collection and utilisation in the dairy industry.</p> <p>Presented a vision of integrated record-keeping and information-sharing between linked computerised central and satellite cattle databases to improve the industry's efficiency and to meet growing needs for accountability and traceability.</p>	<p>1996: Report of the National Cattle Database Working Group (a broad-based industry group, including representatives from 14 stakeholder bodies).</p> <p>Recommended establishing a national cattle database, based as soon as technically feasible on the electronic capture of records and information on the identification and movement of all cattle. It also recommended that information should be recorded to provide wider assurances as to the background and health status of British cattle, help improve the national beef herd and simplify the paperwork facing farmers, markets and slaughterhouses.</p>	<p>1996-97: Consultation responses to the Department's proposals.</p> <p>Key stakeholders, such as the National Farmers' Union, criticised the Department's proposals as 'minimalist ... heavily paper-based (and) did not allow the maximum use to be made of existing proven technology.'</p>
--	--	--

Source: National Audit Office

Other potential benefits have yet to be achieved

2.25 The 'Foundation' Cattle Tracing System had to be implemented quickly and did not seek to realise all of the potential benefits of a more developed system immediately. It was envisaged that, after two to three years of operation, it would be enhanced 'to provide richer information and ... more sophisticated means of data capture'. Pressure of events, such as the 2001 outbreak of foot and mouth disease, and new requirements, such as the introduction of subsidy cross-checks, have delayed enhancements, although development plans are regularly reviewed with industry partners.

2.26 Livestock industry stakeholders told us (Appendices 3 and 4) that the System currently delivered few of the anticipated 'added value' benefits - such as in livestock management, breeding, and supporting farm assurance schemes (**Figure 7**) - and is not integrated with industry databases. In contrast, the national cattle databases in Denmark, Finland and the Netherlands (Appendix 5) are run by industry and built on top of existing performance and pedigree databases. Slaughterhouses also have some electronic access to these other databases. In these countries, where co-operation between different parts of the industry is historically closer, the industry was more directly involved in developing and operating the system, and in Denmark the government is able to use a database that had already been built and paid for by industry to promote their goods for export.

2.27 More recent developments to the System have been developed in close collaboration with industry. For example, the specification for the web-based CTS Online system was developed with a wide range of industry partners, and the solution was developed with farm software suppliers to enable ready integration with their farm software packages. The British Cattle Movement Service is now setting up a software suppliers' forum to ensure future developments too are taken up readily by commercial partners and the transition to newer technologies smoothed for customers and users. The Department hopes to make further progress through the new IT developments examined in more detail in Part 4.

The accuracy, completeness, timeliness and efficiency of the Cattle Tracing System can still be improved

2.28 A common theme to many of the problems discussed in the preceding paragraphs is the incompleteness and inaccuracy of information held on the Cattle Tracing System. Reviews of the System in 2000 under the government-wide Better Quality Services initiative, and in 2001-02 by the European Commission and European Court of Auditors, also highlighted serious concerns about data quality and delays in notifications. In November 2001, the Commission stipulated certain areas that needed further development before it would approve formally the Cattle Tracing System as 'fully operational'. The Department has made considerable progress in these areas, but told us that it is unable yet to reap the benefits of this because the Commission appears to be delaying accrediting any further databases until it has reviewed its own procedures for doing so. With recognition, countries can reduce annual cattle identification inspections of farms from 10 per cent of holdings to five per cent and dispense with cattle passports, potentially saving taxpayers approximately £4 million a year. The Service is committed to achieving these goals and, with the Department, is actively pursuing the full accreditation of the System with the Commission.

2.29 We therefore examined the extent to which all cattle are identified and that information held on the Cattle Tracing System is complete, accurate and up-to-date, the effect of errors on costs, and the scope to improve matters.

Almost all cattle are identified by their keepers, although not always properly

2.30 Accurate identification of all animals is fundamental to effective operation of the System. Evidence from farmers and others in the livestock industry we interviewed (Appendix 3) and on-farm inspections

indicates a high level of compliance with the requirements of the Cattle Tracing System to notify the Department of cattle births, movements and deaths. This is because animals cannot be legitimately sold, or subsidy obtained, without proper paperwork. However, omissions and errors by keepers (Figure 8) have reduced the value and effectiveness of the System.

2.31 Where failings and discrepancies in identification are found during inspections, movement restrictions are imposed either on the individual animal concerned or upon the whole herd. These restrictions remain in place until the errors are rectified. In the 2002-03 inspection year, there were 148 whole herd movement restrictions and 826 individual restrictions. In a few cases, errors are deliberate and cases are investigated by the Department's legal branch. There were 19 such cases during 2002-03. Local authorities also undertake prosecutions for serious breaches. An example is the fraud of 'cattle clocking' (Figure 9). This involves the deliberate impersonation of the identity of a younger animal in an attempt to subvert the ban on animals more than 30 months old being slaughtered for human consumption, or to disguise a mistake made in the past.

2.32 The Meat Hygiene Service does not maintain detailed records of the number of animals rejected as a result of identification irregularities, since it refers cases to local authorities, who are responsible for enforcement of animal identification legislation. Somerset Trading Standards told us that, in the year to September 2003, the Meat Hygiene Service referred 340 cases from slaughterhouses of cattle with identification discrepancies, including 47 cases where age or true identity was suspect. Gloucestershire Trading Standards also told us that each month it receives typically around four referrals from Meat Hygiene Service inspectors of animals presented for slaughter that appear to be over 30 months old. While each such case is a potentially serious breach of the identification regulations, in the context of the two million cattle slaughtered annually for human consumption, the level of serious age misstatement is low.

There are gaps in the movement histories of about one in eight cattle in the national herd

2.33 A particular problem for the British Cattle Movement Service is the high level of anomalous movements - reports of movements that cannot be matched to information already held on the Cattle Tracing System. With almost a third of the notifications received causing some sort of conflict with information already held and a quarter generating an anomaly, the workload arising from these was much higher than had been foreseen in the design of the Cattle Tracing System and of the British Cattle Movement Service.

8 Examples of errors in the completeness and accuracy of cattle data found during the 2002-03 inspection year

There are still problems with completeness and the accuracy of cattle data

Completeness

Births. The gender breakdown of notified cattle births in England suggests that each year at least 75,000, or a fifth of all, male dairy calf births are not registered: the calves having been killed soon after birth, before they need to be registered, as they have little value. These animals do not enter the human foodchain, but not registering calf births can affect subsidy claims dependent in part on a herd respecting a ratio of female calves to cows. It is now possible for keepers to record these 'stillbirths' with the British Cattle Movement Service.

Movements. Extrapolation of the results of on-farm cattle inspections during 2002-03 for England suggests that around 48,000 (or 0.8 per cent of all) cattle in the national herd had movements recorded in on-farm records that had not been reported to the British Cattle Movement Service. Almost a third of notifications received by the Service cause problems in processing on the Cattle Tracing System because of incomplete or contradictory information being offered by keepers.

Deaths. Passports have not been returned to the British Cattle Movement Service for 32,600 (four per cent) of the 758,000 cattle killed during the 2001 foot and mouth disease outbreak. These animals remain shown as alive on the System because the Service, despite writing twice to affected holdings, has been unable to confirm the identities of the individual cattle. A Cattle Tracing System statements project is about to provide all keepers with details of the cattle registered to them and will allow the Service to take these cases up again with keepers.

Accuracy

Date of birth. This is unknown for 334,000 cattle in Great Britain that were born before July 1996, although the fact that these animals were born before this date is recorded. In addition, the latest data from inspections of on-farm records in 2002-03 suggests that the date of birth of 17,000 cattle in England may have been registered incorrectly on the Cattle Tracing System by keepers. The Department's investigation of the cases found that more than 90 per cent of these are wrong by less than 15 days.

Breed or gender. Cattle inspection results suggest that the breed or gender shown on a passport is incorrect for around one per cent of the national herd. Such errors can lead to rejection of subsidy claims and could lead to misrepresentation if the keeper tries to pass the animal off as a higher commercial value breed.

Parentage. Cattle inspection results suggest the identity number shown on the Cattle Tracing System for a calf's mother is different somehow in format or detail for around five per cent of cattle. Errors in the identity details of the mother are the most common reason why passport applications fail the System's automated checks. The most common error is the inclusion of leading zeros within eartag numbers when they are not required. This is a legacy of changing the format of the eartag number to include leading zeros in April 1995, with some keepers mistakenly including them when reporting older animals' eartag numbers.

Source: National Audit Office analysis of the Department's data

9 Cattle clocking

Money can be made from faking the identity of cattle



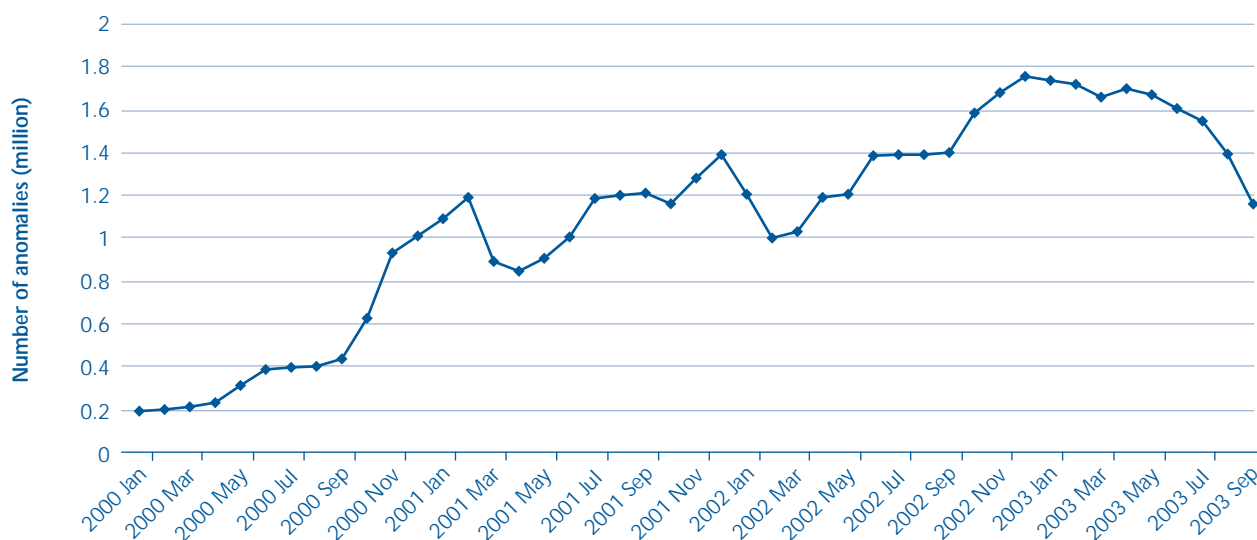
'Cattle clocking' can be motivated by the potential to profit by several hundred pounds from the difference between the value of an animal sold for beef and the compensation paid for an animal slaughtered under the Over Thirty Month Scheme. It involves obtaining the passport of an animal that has died or buying a barren cow and claiming it has given birth to obtain an additional passport. The passport and replacement eartags are then attached to an older animal, bought for a low price because it is over 30 months old or because it has never been registered.

In cases where the Meat Hygiene Service official inspectors suspect fraud, the carcass will be detained and the matter referred to the relevant local authority and the British Cattle Movement Service for investigation. A recent successful prosecution in Somerset resulted in a keeper being fined £16,000 (including costs) for mis-description of three cattle brought to a slaughterhouse and for 21 other breaches of cattle identification regulations. The fraud is consequently high risk for those seeking to perpetrate it and infrequent. However, unscrupulous fraudsters have attempted to disguise the true age of the animal, even reportedly removing extra teeth with hammers.

Source: Discussions with Gloucestershire and Somerset County Council Trading Standards

10 Movement anomalies awaiting resolution: 2000 to 2003

The number of movement anomalies awaiting resolution increased to a peak of 1.7 million in December 2002, but had been cut to 1.2 million in September 2003



Source: National Audit Office analysis of British Cattle Movement Service data

2.34 By law, keepers are responsible for ensuring that the information they submit and which is held on the System is accurate. The Service took the view initially that its top priority was to cleanse and process accurately and quickly the birth and registration information submitted by keepers. The establishment of accurate dates of birth and links between cows and their offspring was critical to meeting the original animal health objectives of the System. The Service has also always tried, through contacts with keepers and by introducing improvements to the System, to resolve movement anomalies as they arise. But the rate at which they could be cleared was less than the rate at which they arrived and as a result, between January 2000 and December 2002, the number of movement anomalies awaiting resolution increased eightfold to a peak of 1.7 million (Figure 10).

2.35 Since the end of 2002, the Service has given increased priority to the cleansing of anomalies and in 2003 the Department allocated £270,000 to the Service to pay for staff for additional data cleansing of movement anomalies. As a result, the Service has reduced the outstanding total by one third, whilst clearing fresh anomalies as they arise. Despite this, there remain unresolved gaps or anomalies in the movement records for around one in eight cattle now alive, with current location unclear for two per cent. Overall, the Cattle Tracing System shows some sort of problem with fewer than three per cent of the 44 million movements it has recorded, with anomalies in others having been resolved.



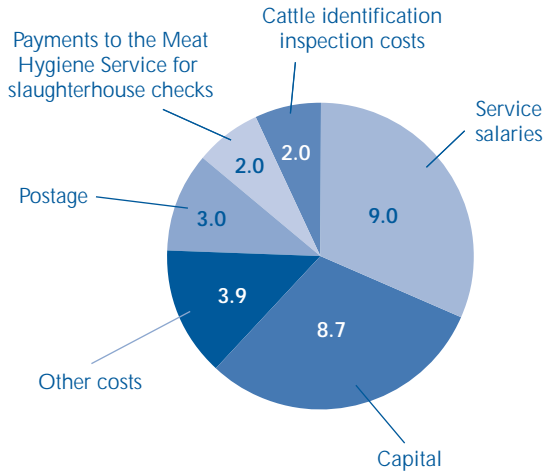
An example of a movement card

Current error rates are increasing cattle tracing costs

2.36 In 2000, the Better Quality Services review found that 37 per cent of passport application forms submitted by keepers to the British Cattle Movement Service contained errors. Since then, keeper education and form redesign has helped reduce error rates to 25 per cent for forms received by post and 33 per cent for e-mails. These errors are identified by the Cattle Tracing System's validation processes and often require contact with the keeper for their correction. Some errors are introduced by the Service: three per cent for passport applications and one per cent for death details, for example, as a result of scanning errors or typing mistakes. However, nine out of ten of these data capture errors are subsequently caught by the Service's other validation checks and are cleared up quickly.

11 Costs of the Cattle Tracing System (£m) in 2002-03

The Cattle Tracing System cost over £28 million in 2002-03



NOTE

Costs are for Great Britain.

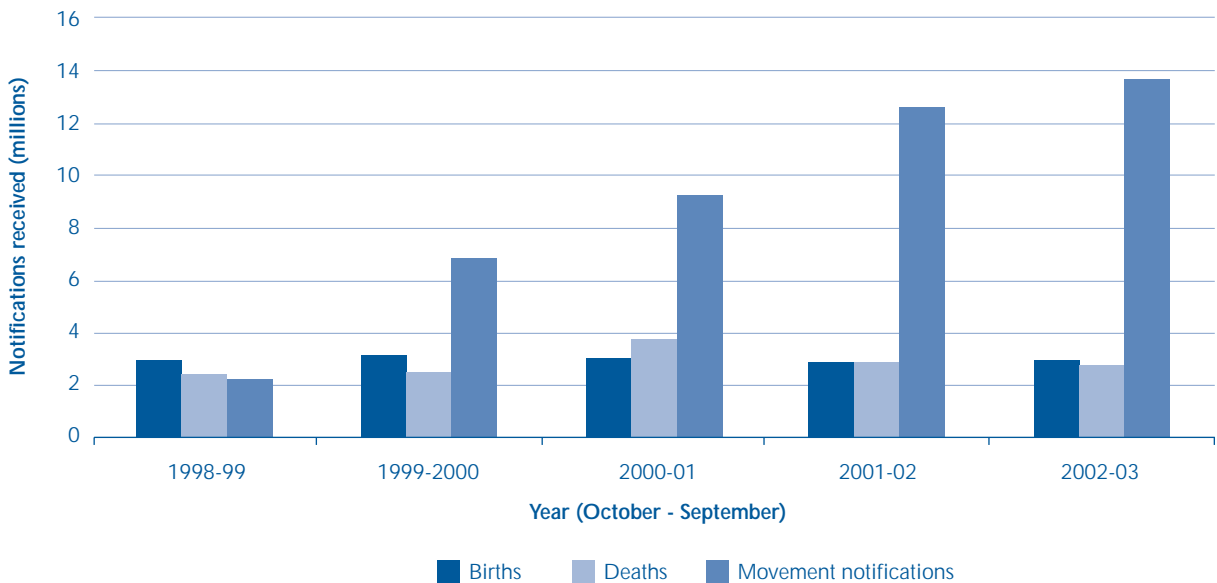
Source: British Cattle Movement Service

2.37 Error rates impose high costs. A third of Service expenditure (Figure 11) relates to salaries and the Better Quality Services review calculated that two-thirds of staff time is employed in correcting errors made by keepers or in-house. Since 1998, staff numbers have tripled to around 700 (full time equivalents), including 220 agency personnel, despite the Service operating to and being recognised as fully compliant with the BS EN ISO 9001:2000 standard. This is well above the 'steady state staffing level of around 440-460' that the Service had estimated, in 2000, that it would require once it covered the full national herd. The main areas for increased activity have been in clearing up the errors reported in movement notifications, which have increased significantly (Figure 12) as the number of animals on the database has increased. Each error requires investigation by the Service and most involve contact with the parties involved in the trade by telephone or letter.

2.38 Anomalies arise mainly from notifications received by post or e-mail. In 2002-03, around 80 per cent of applications for cattle passports and 93 per cent of movement notifications came by post or e-mail: the rest by the Internet service, CTS Online. Online notifications, unlike post and e-mail, are validated at the time that information is entered by keepers, so that incomplete or clearly erroneous information cannot be sent. Consequently, only one per cent of passport applications made online contain errors, compared to a quarter of applications received by post.

12 Key transactions handled by the British Cattle Movement Service

Movements now make up the great majority of transactions



NOTE

Totals are for Great Britain.

Source: British Cattle Movement Service

The CTS Online system offers a way forward

2.39 The Department recognises the potential for its online service to improve data quality, reduce processing costs, save on postage and provide keepers with instant access to information held concerning their holding. The Service has already surpassed its target of 20 per cent uptake of e-services (by volume of transactions) by April 2003 and set itself the ambitious target of 50 per cent web transaction uptake by 2005. The current CTS Online system won a *Government Computing Award for Innovation* in 2002. So far, a quarter of active keepers have already used the online service. However, more than a half of keepers with computers do not yet use them for cattle notifications.

2.40 The Department is keen to encourage greater use of the online facility. Greater use is planned through:

- Follow-up on the programme of demonstrations and tutorials already undertaken at shows, discussion groups and with training partners. More self-teach packages are to be produced too.
- Allowing agent access: Some keepers 'contract out' farm administration to agents, who are not currently allowed to use the online service in their own right on the farmer's behalf. These agents are currently able to use a 'bulk e-mail' facility to report their client's activities and transfer of this work to the web-based

CTS Online system is scheduled for 2004. The Cattle Tracing System has involved intermediaries since it was set up and the value they can add in terms of more timely and more accurate reports is substantial. The use of intermediaries is also seen as one way of overcoming resistance among older keepers to the use of IT to communicate with the System.

- Providing (in 2004) an Internet-based bulk-notification facility for notifications from markets and slaughterhouses, to replace e-mail submissions.
- E-enabling keepers who do not own computers: The Scottish Executive, which is committed to electronic data transfer, committed £2 million to provide much of the set-up costs of CTS Online, a Department-led initiative. It is now funding CTS Online facilities at markets in Scotland to encourage use by keepers without on-farm computers.

2.41 CTS Online is a positive development and is the most efficient way for notifications to be sent. However, for the foreseeable future, a substantial number of keepers will be unable or unwilling to use a web-based notification system. For these keepers, the examples shown by some other cattle registration bodies in Britain and the European Union indicate that telephone-based notifications can be more efficient and effective than postal if they involve data validation at point of capture (**Figure 13**).

13 Two cattle registration systems that use telephone-based data capture

Telephone registration can be efficient and help validate information before acceptance



Holstein UK provides pedigree registration for 250,000 calf births each year and makes over 110,000 passport applications by e-mail to the British Cattle Movement Service on behalf of many of its 9,000 members. The organisation validates its members' reports against its own data before forwarding them to the British Cattle Movement Service. The reports have a lower error rate in them as a consequence.

In 1999, it moved from a postal to a telephone-based registration service. This deals with queries at the point of information collection, avoiding the need for subsequent data cleansing, and is supported by computerised data validation controls to allow call centre staff to check information as it is reported. There is also an Internet reporting facility.

Holstein UK has achieved massive cost savings with this new system, now employing two-thirds fewer staff than in 1999. A registration takes, on average, a minute an animal and each call centre operative registers around 14,000 animals a year. Data collection and checking costs have been reduced by three-quarters compared to the former paper system.



The Netherlands national cattle database. The Dutch equivalent of the Cattle Tracing System is totally paperless. A half of transactions are made by phone into a voice-activated response system and the rest are by other electronic means. Pre-validation checks prevent clearly incorrect information entering the system and fewer than two per cent of notifications contain errors.

The Dutch cattle herd is two-fifths the size of Britain's. Cattle move through markets less, a higher proportion are dairy and there are no paper passports, as the database is fully approved by the European Commission. These factors mean that the workload and level of farmer introduced errors are less than in Britain. Using an outsourced fully-automated telephone service means that staff numbers at the cattle database's headquarters are less than 40.

Source: National Audit Office

Animal Details

Animal Identity	Sex	Date of Birth	Date of Death
00000000	Male	05/07/2005	20/11/2005

Gender Test Details

Reference Test Identity	Sex Identity	Current Passport Version

Treatments

Reference Identity	Date	Description	Class Reference No	Status	Description
Beef Special Premium Scheme	13/11/2005		BSPS Class Type 1		XXXXXX
Beef Special Premium Scheme	14/11/2005		BSPS Class Type 2		XXXXXX

Movements

Holding	Holding Name	On Date	Off Date	Movement Type
73000000	ALLOTS FARM	20/11/2005		Death
73000000	ALLOTS FARM	03/06/2005		Off Requested On
73000000	ALLOTS FARM	01/01/2005		Off Holding
02000000	GREEN ACRES	01/01/2005		On Holding
02000000	GREEN ACRES	05/06/2005		Off Holding
73000000	WY COTTAGE FARM	05/06/2005		On Holding

An example of a movements history page on CTS Online

The level of errors can be reduced

2.42 In England, the seller of cattle reports the movement 'off' his or her holding and, separately, the buyer reports the movement 'on', but neither is required to identify the other. Notification is usually by completing and tearing off a 'movement card' from a cattle passport and sending it by freepost to the Service. When a sale is through a market, there are three separate notifications (by the seller, the market, and the buyer).

2.43 'Separate-reporting' is a major contributor to the anomalies held on the Cattle Tracing System. Each anomaly takes, on average, 10 minutes of staff time to clear and the accumulated backlog would take around 180 staff years to clear. The Better Quality Services review in 2000 challenged the viability of continuing this approach and recommended changes to address the problem:

- A single notification of the pair of 'off' and 'on' movements, by the buyer for non-market movements and by the market otherwise. As well as eliminating anomalies, it would save over £1 million annually in postage costs.
- Sending keepers statements of the identification and location details recorded on the Cattle Tracing System for their animals. Most other Member States provide keepers with feedback on notifications made, which enables errors and omissions to be rectified, and the Service plans to introduce such statements before the end of 2003. Statements are being designed for issue quarterly on paper with

plans for daily updates of the electronic version. The Service recognises that more frequent feedback to customers will be helpful in getting them to improve the quality of their data.

2.44 By using different approaches to movement notification, Scotland and Northern Ireland have reduced the scope for anomalies and record most notifications within 24 hours. In Scotland, since 2001, movements through markets have involved a single notification (specifying where the animals have come from and are going) made by the market electronically. This has reduced the scope for anomalies, but has resulted in duplicate reports on the Cattle Tracing System arising from some keepers making notifications in addition to those made by markets on their behalf.

2.45 In Northern Ireland, movements are entered on terminals at markets by staff of the Department of Agriculture and Rural Development. Checks are made to ensure that animals entering are in the herd of the seller and the buyer must notify the Department's officials before an animal can leave. Similar checks are carried out at slaughterhouses, with animals marked off the system on day of slaughter. Other Member States achieve low levels of movement anomalies by requiring both parties in a trade either to identify each other or make a joint notification. Different approaches have merits as well as drawbacks and are being examined by the Department as part of a Service Delivery Improvement Project, which the Department has put into place since the merger of the Rural Payments Agency and the British Cattle Movement Service to improve the service received by customers.

Part 3

Identification and tracking of sheep and pigs has improved

3.1 This Part examines:

- the objectives for identifying and tracking sheep and pigs;
- the extent to which current arrangements for identifying and tracking sheep and pigs (**Figure 14**) address the weaknesses revealed by the 2001 outbreak of foot and mouth disease; and
- how current systems for identifying and tracking sheep and pigs are operating.

Sheep and pigs present particular challenges for identification and tracking

- 3.2 The potential benefits of identifying and tracking sheep and pigs are broadly the same as for cattle: disease control, checking subsidy claims for sheep, and helping farm management. However, important differences between the species have meant that identification and tracking arrangements have taken a different form and are simpler:

14 Current identification and tracking arrangements for sheep and pigs

Identification and tracking requirements differ for sheep and goats, and pigs

Keepers are required to keep records of movements of animals of all species. In addition:

On identification:

- All **sheep** born after 1 February 2003, and all animals not previously tagged at that date, should be tagged to show both the animal's holding of birth and a unique identification number allocated by the keeper. Older animals need not be uniquely identified but some may be, for example for pedigree purposes.
- **Pigs** do not need to be individually identified except if moving to shows. As of 1 November 2003, all pigs going to slaughter must bear an official herdmark of the despatching premises. In addition, pigs over one year old must be marked with the despatching premises' herdmark when moved to any destination.

On tracking:

- Keepers of animals are required to report all movements of **pigs** and most **sheep** movements to local authorities, who input details to a national computer system established by the Department (the Animal Movements Licensing System). In addition:
- For **sheep**, since February 2002, each time an animal moves (except to slaughter), the keeper must add an eartag showing its holding of departure (up to a maximum of three eartags, after which an identification number must be recorded in the keeper's records and reported).
- **Pigs**: As of 1 November 2003, all pigs moving to slaughter and any pig over one year old and moving anywhere must be marked with a slapmark (a type of tattoo), ear tattoo or eartag with the despatching premises' official herdmark, which can be cross-checked to the Department's database.

Source: National Audit Office

- The March 1996 government announcement on BSE made it urgent to establish a comprehensive identification and tracking system for cattle to protect human health.
- Calves are larger, which makes it easier to insert tags in their ears (pigs, in particular, often try to remove tags from each other). Calves are also more valuable, and it is easier to justify the cost of tagging an animal worth £500 than it is one worth £50.
- Pigs do not attract a subsidy from the Common Agricultural Policy. Therefore there is no benefit to be gained from tracking pigs to check subsidy claims.
- European Union requirements for identifying and tagging sheep and pigs have developed more slowly than the requirements for cattle.
- Most pigs are reared intensively indoors, with their production aimed at producing an output of a defined weight at a certain age. Pigs are susceptible to a range of diseases, some of which can spread rapidly. This has led the pig industry to minimise movements of animals and the widespread adoption of 'pyramids' - linked breeding and fattening units within which movements of animals are confined. Excluding movements within pyramids, three-quarters of pigs move only once, direct to slaughter.
- Conversely, sheep often move as grass availability changes. There are also many seasonal movements, from summer to winter grazing, and regular movements between farms on hills, uplands and lowlands for purposes of breeding, lambing and fattening. For example, an estimated two million sheep were moved around the country during the three-week period before the source of the 2001 outbreak of foot and mouth disease was known.
- Sheep are traded typically through markets to a greater extent than cattle and pigs.



The Department responded to problems revealed by the foot and mouth outbreak by introducing the Animal Movements Licensing System

3.3 The 2001 outbreak of foot and mouth disease highlighted the difference between tracking of pigs and sheep:

- Identification and movement recording of pigs as required by legislation was sufficiently robust to allow prompt tracking of the movement of pigs.
- Tracking sheep presented enormous difficulties. It was not always clear from market and farm records where animals had been sent ultimately, as records detailed the buyer, who was often a dealer. Sheep may also have passed through several markets, making it difficult to identify from where they had originated. There were particular problems where batches were split and mixed, where animals were sold several times during a week and where sales were made outside official markets and not recorded in market records.

3.4 The Department responded to the experience of the outbreak to provide clearer identification of the origin of animals moving between farms and through markets:

- With effect from February 2002, when livestock markets were allowed to resume following the foot and mouth disease outbreak, the requirement introduced in January 2001 to tag all sheep moving off their holding of birth was extended by the Department to cover all subsequent moves as well (although still excluding moves to slaughter). This extension required an additional tag to be added each time an animal left a holding, showing the

holding's official flock number. For welfare reasons, tags on animals were limited to three, and hence an animal could be subject to no more than three moves (unless to slaughter), unless they were individually identified and their identity recorded.

- The Department has required the individual identification of all sheep born after 1 February 2003 or not previously identified. The earlier requirement for movement tags remains, and movements continue to be restricted to three (plus one slaughter move), unless the animal's individual identity is recorded. Keepers are not normally otherwise required to record the individual identification number of an animal when it moves.

3.5 The Department also introduced the Animal Movements Licensing System in September 2001. During the foot and mouth disease outbreak, movements of animals could only take place after prior approval of an Individual Movement Licence. As the risk of disease resurgence abated, from September 2002 the Department issued General Licences allowing most moves to take place without prior approval, provided that they were reported. The Animal Movements Licensing System computer system records these movements and allows local authorities to check that restrictions on the animal movements are being observed. The restrictions have included not allowing animals to move off a farm until 20 days after new arrivals: reduced to six days from 4 March 2003 for cattle and sheep.

3.6 The Animal Movements Licensing System provides a computer record of all movements of pigs and nearly all movements of sheep in England and Wales and accesses the Cattle Tracing System for cattle movements. It currently excludes movements of sheep going to slaughter, because of the transaction volumes involved. A development of the Animal Movements Licensing System will enable such movements to be captured from early 2004. The computer system is owned and overseen by the Department, and operated from a small central unit. Information is input, using an online Internet-based system, by local authorities, who receive completed paper movement notification reports from keepers. Except for cattle, information in the Animal Movements Licensing System relates to batches of animals, rather than individuals.

3.7 The main control to make sure that keepers of sheep and pigs comply with the system is checks by local authorities at markets, farms and the roadside. Rural Payments Authority inspectors checking claims for Common Agricultural Policy sheep subsidy and state veterinary officers may also check farm records.

The identification and tracking of sheep and pigs is still developing

The Animal Movements Licensing System is popular with the industry and has improved tracing capability

3.8 The introduction of the Animal Movements Licensing System allowed farm-to-farm livestock movements to resume, and, later, livestock markets to re-open, from February 2002. Between February 2002 and March 2003, the system recorded in England and Wales 380,000 batch movements of 14 million sheep and goats, and 105,000 batch movements of 8.5 million pigs. The system is strongly supported by the livestock industry. The National Sheep Association considers it 'robust and effective' and a 'major step forward for the industry'. The National Pig Association also considers it works well and provides good traceability.

3.9 The system tracks groups of animals moving on a particular day, where they came from and, importantly, their ultimate destination. Information is not real-time and will, typically (after inputting to the system) be five days after the event. The system has also yet to be tested in a disease outbreak, but our visits to and discussions with market officials suggest that the Department will be better placed than in 2001 to track movements of animals. However, veterinary officers would still need to check market records for very recent movements.



15 Compliance with European Union requirements

There has been late compliance with some European Union requirements

European Union legislation	Requirements	When complied with in England
Directive 102 of 1992	<i>Sheep, Goats and Pig Identification</i> Permanent marks, using an eartag or tattoo, to be applied before an animal leaves its holding of birth. Required from January 1994 for pigs and January 1995 for sheep and goats.	Met for sheep in January 2001, with the compulsory tagging of sheep (with their flock number) when they leave their holding of birth. Not yet implemented fully for pigs, but, with effect from November 2003, requirements have been strengthened for slaughter and older pigs (Figure 14).
Directive 64/432 (amended by Directive 2000/15)	<i>Movement tracking of pigs</i> Member States to establish a computerised system for tracking batch movements of pigs by 31 December 1999. The Commission later extended the deadline to the end of 2001 for movements from the holding of an animal's birth, and to the end of 2002 for other movements.	Implemented through the Animal Movements Licensing System in 2002.

Source: National Audit Office

But there has been some delay in implementing European requirements

3.10 The European Union has established the current requirements for sheep and pig identification and tracking over a period of time. The Department has taken action to comply with some, but not all, of these requirements (Figure 15).

3.11 In the 1990s, the UK had a system of identifying sheep and goats using temporary paintmarks supported by a movement document retained by the destination farm. The Department considered that these measures addressed the identification requirements of Directive 102 of 1992 while addressing industry concerns about the cost and harm to animal welfare of tagging young lambs. However, following clarification with the European Commission, the Department moved to permanent tagging of sheep from 1 January 2001. This move was in line with a recommendation from the Committee of Public Accounts for full implementation of the Directive by the end of 2000 to help control payments of Common Agriculture Policy subsidy to keepers of sheep.²

3.12 The Commission's Food and Veterinary Office considered that late implementation of the Directive contributed to difficulties in tracing sheep movements during the 2001 foot and mouth outbreak. It is the Department's view that the way in which it gave effect to the Directive is unlikely to have had any effect on the UK's ability to carry out sheep tracing during the foot and mouth disease outbreak. The Directive provides for sheep to be identified by means of an eartag or tattoo

which indicates its holding of birth. The application of this mark gives visual identification of where an animal was born, but it does not provide full traceability because it does not help with identifying intermediate locations that an animal may have moved from or to. The system which operates now in the UK (paragraph 3.4) goes beyond the requirements of Directive 102 of 1992.

3.13 In November 2002, the Department announced a review of the current rules for pigs and proposed to implement the Directive in 2003. This announcement followed an alert in June 2002 centred on an unmarked pig suspected of having foot and mouth disease (Figure 16). However, the National Pig Association told us that, in their view, there is no need for compulsory tagging or tattooing, except for animals that move through markets and collection centres or move outside pyramids. In August 2003, the Department announced enhancements to the marking requirements for all pigs going to slaughter and for pigs over the age of 12 months from 1 November 2003. It is continuing to discuss with the pig industry the industry's concerns at the need for compulsory tagging for pigs moved from the holding of birth.

Greater use of electronic data transfer would improve the effectiveness and efficiency of the Animal Movements Licensing System

3.14 The Department meets the running costs of the Animal Movements Licensing System in England and Wales, around £4 million in 2002-03, and set-up costs of £1.6 million. In 2002-03, four-fifths of the running costs

16 Alert over an unmarked pig

An incident in 2002 demonstrated a weakness in pig identification and tracking rules.



On 20 June 2002 checks on a female pig at a slaughterhouse in Leicestershire raised suspicion of foot and mouth disease or swine vesicular disease. Selby livestock market, a collecting centre, and 21 farms that had sent female pigs through the market and centre to the slaughterhouse were placed under disease control restrictions.

Finding out where the pig had come from was made unnecessarily difficult because it, and others in the same batch, had not been marked as they should have been. Of the 21 farms, only four could be eliminated quickly from inquiries because markings tallied with those recorded on other pigs at the slaughterhouse, and the source of the suspect pig was only identified when its owner came forward.

Tests on the pig proved negative but the episode highlighted non-compliance with pig identification rules, for which the owner of the suspect pig and a relative were fined nearly £1,000.

Source: National Audit Office analysis of Defra documents

related to data capture, although the proportion is falling. For several hundred staff employed by local authorities, part of their duties is to check and input data provided by keepers on paper movement notifications. In contrast, in Scotland, livestock markets and slaughterhouses report movements over the Internet and data is input centrally by the Scottish Executive Environment and Rural Affairs Department. Nine-tenths of Scottish notifications are reported electronically and most information is on the system within a day of the movement, greatly reducing the time and effort required to get information onto the system.

- 3.15 To reduce the cost of inputting data onto the Animal Movements Licensing System, the Department has experimented with slaughterhouses providing electronic data transfer for pig movements. In the next phase of Animal Movements Licensing System implementation in late 2003-04, the Department plans to introduce a facility for electronic data transfer from markets and slaughterhouses by e-mail. This should result in cost and resource savings for local authorities. It also aims to extend the system to include movements of sheep going to slaughter and movements between farms where ownership is linked. This will double the number of sheep movements recorded.

Holding references can be misleading

- 3.16 The Animal Movements Licensing System shares with the Cattle Tracing System the weakness that holding references do not always reflect where animals are kept. For example, the address recorded for a holding may be an administrative office where no animals are kept. The Department is aware of this problem and is addressing it through its Customer Register Project, which aims to establish a corporate database of the Department's customers, including all agricultural businesses.
- 3.17 Long-running problems exist on the completeness and accuracy of the Department's records of pig holdings. In 1999, a feasibility study by the Department into establishing a pig tracing system (as required by the European Commission) found twice as many pig holdings recorded on the Department's veterinary computer system (Vetnet) as recorded in the Department's annual Agricultural Census, but some holdings recorded in the census were not on Vetnet. The reasons for the difference included some keepers failing to report the creation of new holdings within 'pyramids', hobby farmers failing to register, and keepers who had left the industry failing to de-register. Farmers and enforcement bodies told us that during the 2000 classical swine fever outbreak veterinary time was wasted in visiting locations without animals and searching out 'missing' farms.



3.18 Some data cleansing has occurred subsequently, but the Department is looking closely at how it can improve the data it holds on pigs. New rules for tracking slaughter animals (Figure 14) should bring to light unregistered keepers who send pigs for slaughter because pigs moving to slaughter will need to be registered with an official herdmark, which is only available when a holding is registered. The Department will also be targeting, through private vets, pet pig keepers and hobby farmers to encourage them to register. Data on pig keepers and holdings will also be updated during the development and roll-out of the Department's Livestock and Customer Register projects.

Individual identification of sheep is still problematic

3.19 Although individual identification of new-born sheep has existed since February 2003, it is left to farmers to assign unique numbers within their flock. This might lead to problems of data matching and duplication of numbers once any central database of individual sheep is established. Under the National Scrapie Plan (Figure 17) increasing numbers of sheep (600,000 by August 2003) are separately electronically-identified with a bolus containing a unique 16 digit number. This is cross-referenced to any existing eartag identification.

17 Sheep identification for the National Scrapie Plan

The National Scrapie Plan also requires sheep to be identified individually.



The National Scrapie Plan is a voluntary long-term programme for breeding genetic resistance to scrapie, a fatal neurological disease of sheep. The Plan involves taking a blood sample from sheep in participating flocks for genotype testing to determine their natural resistance or susceptibility to scrapie and whether they can be bred from or not in accordance with National Scrapie Plan rules.

The sheep that are tested are identified with a bolus electronic identification device (see note), which can be read electronically. The electronic identification numbers are allocated centrally by the State Veterinary Service and are a different series to the numbers allocated by keepers to all sheep born since February 2003. The Plan was launched in July 2001.

NOTE

A bolus is a hard ceramic capsule containing a chip which is swallowed and retained in the fore stomach of cattle and sheep.

The Department will need to take account of the different coding systems in developing future (European Union-wide) sheep identification.

Non-compliance is a problem

3.20 Much of the work of monitoring livestock tracking falls to local authorities. Until recently, the Department had limited information from the more than 200 local authorities in England on their animal health monitoring, inspection and enforcement activities. It received reports of prosecutions under sheep and pigs identification orders - in the year to September 2002 there were six - but there are a range of other steps a local authority can take when an individual breaches any animal health and welfare legislation. The Department did not know how many inspections at markets, farms and slaughterhouses had been carried out, or how many reports of illegal movements or record-keeping anomalies were received.

3.21 To combat this problem, since December 2002, 24 of the larger local authorities in England and Wales, responsible for half of all animal movements, have been piloting an Animal Movements Enforcement System. This system collects data on the nature, level and results of enforcement actions, which is collated by the Department. Results from the first four months, involving checks on over 10,000 records, found errors in almost a quarter of sheep and pig movement documents and licences, and eight per cent of identification and movement records checked on farm. Most of these errors arise from very minor mistakes in completing the forms that can be and are resolved in a short telephone call. The Department intends, over time, to roll the system out to all local authorities.

3.22 In 2002, much of the non-reporting or false reporting of movements related to deliberate efforts to bypass the 20-day standstill restrictions (paragraph 3.5), which were particularly unpopular with the sheep industry. For example, in November 2002, two-thirds of North Yorkshire's 40 on-going animal health investigations related to breaches of the standstill restrictions. The livestock industry expects that the March 2003 move to a six-day standstill will improve compliance.

Part 4

Plans for new systems are ambitious, but risks are being actively managed

4.1 The Department plans big changes to livestock identification and tracking, and major investment in IT and electronic data capture and transfer. Some changes are already being implemented. This Part examines the reasons for change, and how these changes and associated risks are being managed.

Better systems are needed to meet Department and stakeholder objectives

4.2 As highlighted in Part 2 of this Report, change is needed because the current Cattle Tracing System no longer meets the Department's needs. In addition, although introduced only in 1998, the Cattle Tracing System has serious technical limitations in terms of access, ease of use, maintainability, adaptability and ability to link with other systems. It is limited to 640 concurrent users and cannot be used overnight, when data is processed and validated. The System is also increasingly unreliable. For example, hardware problems caused unavailability or poor response times for parts of 39 days in 2002. The Department considers that the risk of prolonged or irrecoverable failure of the System is increasing to an unacceptable degree.

4.3 New and better systems are needed to support key initiatives:

- The Rural Payments Agency is investing £130 million in a Change Programme expected to generate, from 2005, annual cost savings of £36 million, including £7 million from livestock schemes. It has a 'Vision' of drawing information from the Cattle Tracing System to 'populate' farmers' subsidy claims and, in many cases, to calculate automatically how much can be claimed. To achieve this, it is essential that the Cattle Tracing System becomes much more accurate, up-to-date and integrated with Agency systems.

- Under the 'Developing Defra' programme, other parts of the Department are undergoing fundamental change, with strategies dependent on improvements in the livestock tracking system and improved integration. These areas include veterinary surveillance, animal health and welfare, and e-business. The livestock industry also seeks a system that is efficient and 'adds value', for example through better integration across public and private sector computer systems
- The 2001 foot and mouth disease outbreak highlighted weaknesses in identification and tracking systems for sheep. As a consequence, in 2002 the official inquiries into *Lessons to be Learned* and the *Future of Farming* (Appendix 2) recommended traceability based on electronic identification and data transfer. In December 2002, the European Commission also issued a draft Regulation proposing fundamental changes to sheep identification and tracking (Figure 18).

18 The European Commission's December 2002 proposals on sheep identification and tracking

The European Commission proposes recording individual sheep movements

- From 1 July 2003, individual identification, by means of a tag in each ear, of all new born sheep (except for those intended for slaughter before the age of six months), with details recorded in farm records and on movement documents.
- From 1 July 2004, a central register of sheep holdings and, from 1 July 2005, a computerised central database of batch movements.
- From 1 July 2006, individual identification of sheep, using an electronic identifier.

Source: National Audit Office

The Department aims to address key weaknesses of current systems through an ambitious Livestock Identification and Tracing Programme

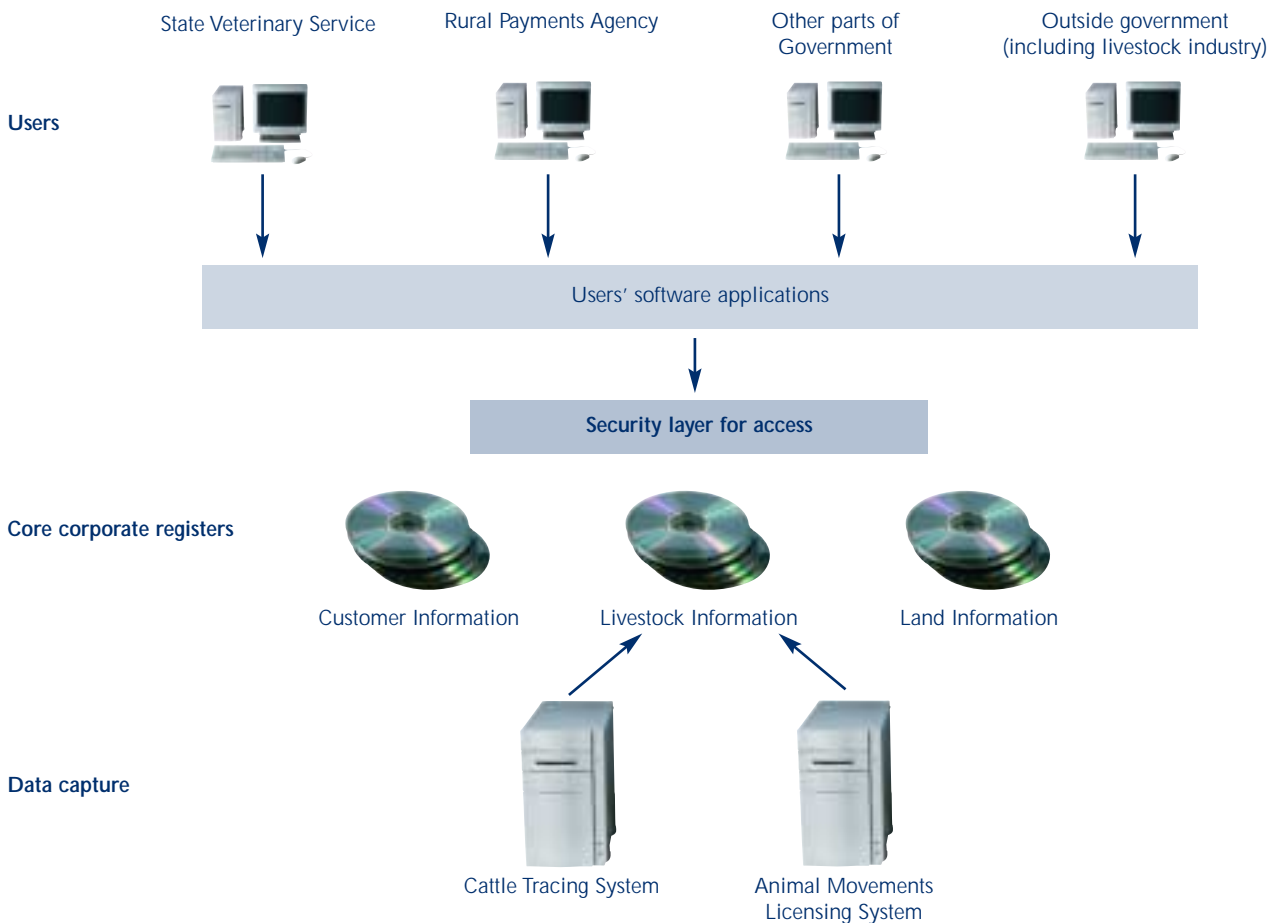
- 4.4 Following a review of its systems in 2001, the Department developed a vision for livestock identification covering cattle, sheep and pigs. It features a single point for collecting livestock information from keepers, encouragement for keepers to use electronic means of recording and reporting information, and the wider availability of livestock data to internal and external users.
- 4.5 The Department plans to implement its vision through the Livestock Identification and Tracing Programme. This consists of several projects to replace and improve the Department's IT systems, culminating in the bringing together into a single Livestock Register of information held currently in overlapping systems and databases,

including the Cattle Tracing System, the Animal Movements Licensing System and other systems containing livestock data. The Livestock Register will be one of three core registers of corporate information (Figure 19) accessible across the Department and by authorised bodies.

- 4.6 The Department also wants, through the Livestock Identification and Tracing Programme, to provide the scope to introduce electronic identification of animals in due course, if this is justified by business benefits or required by the European Union. Electronic identification involves fitting an electronic identifier, such as in an eartag, a bolus, or an electronic chip under the skin, which can be read, using a radio-frequency reader, and downloaded to a computer. The Department and stakeholders see electronic identification as offering scope to improve the efficiency of recording cattle movements and the only practicable way of recording individual sheep movements.

19 The Department's planned three core corporate registers

The Livestock Register will be one of the Department's three core corporate registers



Source: National Audit Office

4.7 The Programme's objective supports some of the Department's top priorities, including:

- helping create a sustainable food and farming supply chain - by making livestock information more readily available to the livestock industry;
- reducing risks of animal diseases - by using improved livestock information to support veterinary surveillance and disease control processes; and
- reducing the regulatory burden - by improved collection and reporting of livestock information.

4.8 The Livestock Identification and Tracing Programme is being implemented through a number of individual projects. The key projects are shown in **Figure 20**. Early developments relate to development of the Cattle Tracing System and Animal Movements Licensing System to address the limitations described in paragraph 4.2 and extend their scope. Further developments of the Cattle Tracing System, such as bulk notification using CTS Online (to replace e-mail notification by markets), slaughterhouses notifying deaths directly electronically, telephone registration of births and movements, and changes to how movements are reported, are under consideration. And only pilot work on electronic identification has been approved until agreement has been

reached on the European Commission's proposals for the identification of individual sheep and the associated technical standards for electronic identification.

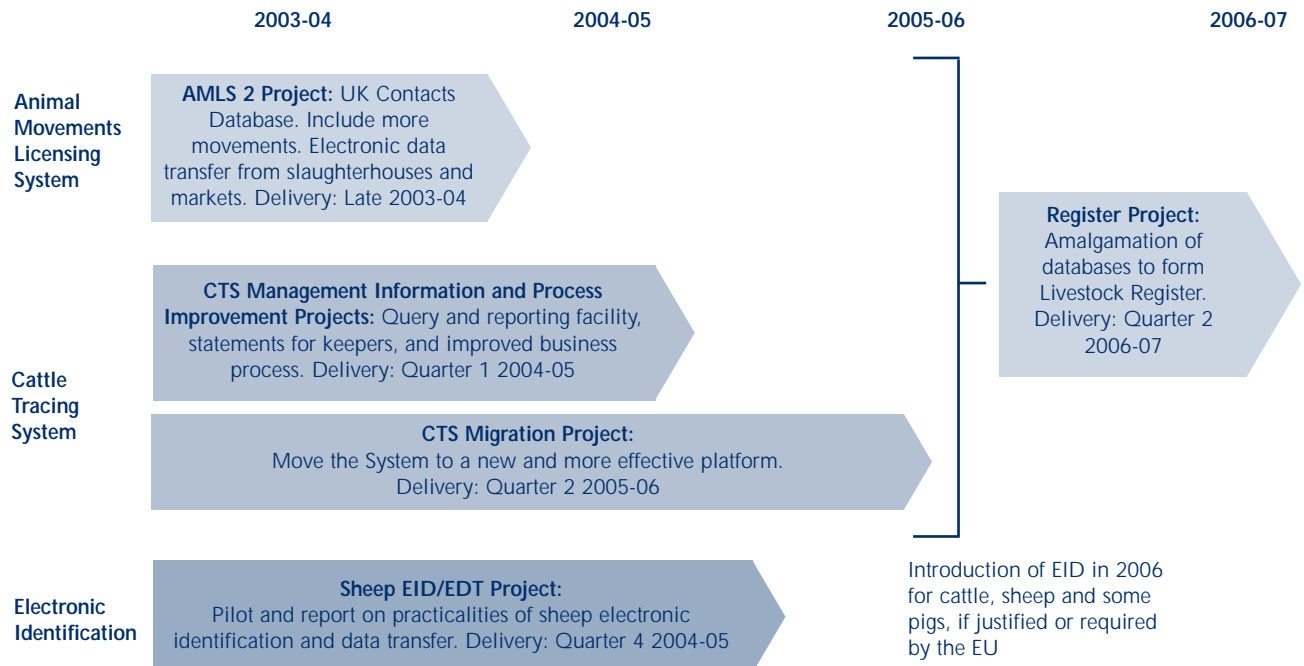
The Programme is high risk, but the Department is seeking to manage these risks

4.9 The Livestock Identification and Tracing Programme is recognised as one of central government's 30 most significant e-service delivery projects. Funding of £136 million has been allocated between 2003-04 and 2005-06, including £46 million in capital investment.

4.10 The Programme offers valuable benefits, making it important that the Department manages successfully the risks arising with a programme of this scale, complexity and dependencies. From past experience of delivery of IT-enabled programmes³, in 2002 the Office of Government Commerce (an independent Office of the Treasury) and National Audit Office identified eight key causes of project failure (**Figure 21**) and we therefore examined the Department's current progress in managing these risks.

20 Timetable for introduction of the Livestock Identification and Tracing Programme

The Programme is being implemented in phases through a number of projects



Source: National Audit Office

3 Improving the Delivery of Government IT Projects, (PAC 1st Report, 1999-2000).

21 Eight identified key causes of IT-enabled project failure

The National Audit Office and Office of Government Commerce have identified a set of common causes of failure in programme and project delivery

- 1 No clear link between project and strategic priorities
- 2 Lack of top-level ownership, leadership
- 3 Lack of effective stakeholder engagement
- 4 Project and risk management not applied
- 5 Poor senior-level understanding of suppliers
- 6 Evaluation driven by price, not long-term value
- 7 Implementation not broken into manageable steps
- 8 Inadequate resources and skills to deliver

Source: Successful Delivery Toolkit, Annex E (Office of Government Commerce)

The Programme is linked to the Department's strategic priorities, but uncertainties remain over European requirements

- 4.11 Development of the three corporate registers for customer, livestock and land information are strategic priorities for the Department. In its IT Strategy 2003, the Department recognised the need to strengthen governance arrangements so that individual programmes are taken forward in a coordinated way. In April 2003, it established a high level Design Authority responsible for ensuring that projects across the Department and the Agency are aligned to corporate needs, in terms of technology and business processes, and that information can be shared and is not duplicated. To further promote integration and synergies, in April 2003 the British Cattle Movement Service merged with the Rural Payments Agency, whilst retaining its reporting lines to the National Assembly for Wales and Scottish Executive.
- 4.12 The Design Authority includes the officers responsible for the customer, livestock and land information programmes along with the Department's and the Rural Payments Agency's IT directors. It is chaired by the Director General of Operations and Service Delivery and will be able to escalate issues where necessary up to the Department's e-Business Sub-Committee, which reports directly to the Department's Management Board.

4.13 A key strategic requirement is for systems to keep pace with developing European requirements. Final European Commission requirements on individual sheep identification and movement recording await discussions between European Union Agriculture Ministers. In concert with other Member States, the Department's lobbying has resulted in the Commission being asked to review options. This has achieved the Department's aim of delaying implementation of the changes beyond the date of July 2003 originally proposed.

4.14 Some European Union states appear to have considered in more detail the implications of the 2006 proposed deadline for introducing electronic identification. For example, the Netherlands has already carried out cost-benefit analyses and set up an authority to manage allocation of electronic identification numbers. The Department told us that, at a combined Department and industry visit to the Dutch Identification and Registration system in October 2002, Dutch government officials reported that their evaluations had concluded that there was a business case for electronic identification for cattle, but not currently for sheep and goats. Although the Department is now actively engaged in European Union discussions on how to introduce electronic identification, it chose not to participate in the 1998 to 2002 European trials of electronic identification because of resource limitations resulting from the BSE crisis. There have been local commercial trials of the technology in England, which the Department part-funded through European Union structural grants but in which it was not involved directly.

4.15 Electronic identification still presents technical challenges and, in order to avoid any nugatory spend if technical standards change, the Department is awaiting the production of a harmonised system from the Commission before encouraging widespread uptake in the industry. Trials in Cornwall and elsewhere in the UK have shown that electronic identification can work well on a small scale, when groups of farms use common technology provided by a single supplier. However, problems can arise when it is used on a larger scale, with identifiers and readers from different suppliers, and when seeking to capture data from animals moving at speed, at a distance or in groups. Recent technical discussions at the European Union's Joint Research Centre, in which the Department participated, have highlighted the outstanding issues that inhibit take-up of this technology. Recognising this, the Department is funding, during 2003-04 and 2004-05, a 12-month pilot trial to test electronic identification and reporting systems in a working environment, involving around 70,000 sheep and selected slaughterhouses and livestock markets.

There is senior-level recognition of the importance of the Programme

4.16 The Department's Management Board has recognised the Programme's importance for delivery of corporate objectives and in February 2003 designated it a 'Mission Critical Programme'. The officer responsible for the Programme is a Grade 3 level official of the Department. The Programme has a Ministerial Champion (the Minister of State for Rural Affairs, the Rt Hon Alun Michael MP) and progress is reported quarterly to the Prime Minister's Office, Office of the e-Envoy and Office of Government Commerce.

Stakeholders are being engaged

4.17 The Department has set up stakeholder steering groups, including government and external stakeholders. The Programme's early developments, relating to the Cattle Tracing System and Animal Movements Licensing System, have strong stakeholder support, but there are concerns about the cost to the industry of some later elements:

Recovering from the industry some or all of the costs relating to the Cattle Tracing System

4.18 When the Cattle Tracing System was developed, the intention was to recover the running costs - now around £25 million a year - from the cattle industry from September 1999. However, charges were waived by Ministers until April 2004 because of the depressed state of the industry at the time. The Department is looking now for recovery to start sometime in 2004 or 2005 and is assessing recovery options against the criteria of fairness and their impact on compliance.⁴ It is also considering reflecting the lower cost for the CTS Online service in lower charges to encourage more use of this service.

European Commission proposals for the double tagging and individual recording of sheep

4.19 The Department has assessed the cost of implementing these proposals in the UK at around £90 million a year if they are introduced without electronic identification and £45 million a year (plus a one off capital cost of £45 million) if electronic identification is used. The Department is arguing that the proposals should only be implemented if they are practical and economic. There is stakeholder opposition to the proposals and support

for the Department's position. The National Sheep Association, the National Farmers' Union, the Country Land and Business Association, the Livestock Auctioneers' Association, the Royal Society for the Prevention of Cruelty to Animals and other stakeholders (see Appendices 3 and 4) told us that the proposals are impractical and unnecessary, and entail large financial and animal welfare costs:

- Double-tagging lambs within a month of birth on hill farms would present enormous difficulties, as would identifying the number for replacement if both tags come adrift.
- Benefits are unclear, as farmers consider that current batch movement recording and tagging arrangements already provide good traceability.
- Recording individual details in farm registers, at markets and in movement documents would be very time consuming and will lead inevitably to inaccuracies without reliable electronic systems.
- To be readable from a distance, tags would need to be much larger than the tags currently used. This would mean that eartags would be more easily lost.

4.20 Key stakeholders, including the National Farmers' Union, the National Beef Association and Assured British Meat, support the Programme's objective to increase the proportion of information captured electronically, but some groups will need support. The Programme's December 2001 outline business case, produced by external consultants, assumed 70 per cent take-up of e-services by farmers, which will be challenging to achieve. The Department recognises that development of a take-up strategy is critical to success⁵ and is looking at options for such a strategy, including partnership with organisations such as breed associations and farmers' agents, and links with other central initiatives. It is also considering ways of encouraging more of those livestock farmers who have computers - currently, two-thirds of dairy farmers and a half of cattle farmers - to use the online service. Our Expert Panel advised that keepers in need of support for e-reporting should be identified and assisted where there are skill gaps, and compatibility with commercial farm software packages will be important. The Programme's e-take-up strategy is seeking to address these issues, building on the progress already made with CTS Online (paragraphs 2.38 to 2.40).

⁴ Since August 2003, the Department has transferred work on cost recovery to a separate 'Cost sharing for animal health' programme.

⁵ Improving Public Services Through e-Government (PAC 44th Report, 2001-02).

The Programme and risks are being managed through the Gateway process

- 4.21 The Programme is being managed through the Gateway process of the Office of Government Commerce. This process, introduced across central government in 2001 to improve the management of major projects, involves short, intensive reviews of projects at six critical stages (Figure 22) by experienced people independent of the project team. To proceed to the next stage, a project must demonstrate that it has adequately addressed the eight common causes of project failure.
- 4.22 With the agreement of the Office of Government Commerce, the Programme as a whole is being assessed through annual Gateway 0 reviews to confirm its strategic direction, while individual component projects will have Gateway 1-5 reviews as they progress. The initial Gateway 0 review for the Programme, in May 2002, concluded that the Programme 'represents a huge opportunity for government, industry and the consumer', but that it 'needs grounding in its wider context, it needs commitment and strengthened governance, and it needs resourcing (both money and people) and expertise'. All of these issues have been subsequently progressed and the Programme's next Gateway 0 review is being planned in autumn/winter 2003.
- 4.23 The Cattle Tracing System Migration and Management Information projects (Figure 20) passed through Gateway 3 reviews in June 2003. The Gateway team considers the Migration Project to be 'well grounded', well managed and on target to succeed and that the Service had sought to reduce risk by changing the hardware first before upgrading the software. The Department has responded to the Gateway team's Gateway 2 recommendations on the Management Information Project to pilot and carry out data cleansing before sending out statements to keepers (paragraph 2.43).

The Department is establishing an Intelligent Customer Function to improve understanding of customers and technologies

- 4.24 Information technology is rapidly changing and complex and, when delivered by external suppliers, it is important that government is an intelligent client, up-to-date with technology, realistic about what systems are likely to deliver and able to actively manage suppliers⁶. In its May 2003 IT Strategy, the Department recognised the need to develop its capability as an Intelligent Customer. It is seeking to address this through specific training of senior staff, sharing experiences with others in similar positions outside, and a mentoring programme.

- 4.25 The projects developing the Cattle Tracing System and Animal Movements Licensing System are being supplied by the Department's IT Division using established government agreements with suppliers. The Department's IT supply will be outsourced in 2004 under a programme called 'e-nabling Defra'. The potential disruptive impact on relationships with existing suppliers for the Cattle Tracing System projects has been identified as a major risk by the Department, which is developing plans to mitigate the effects.

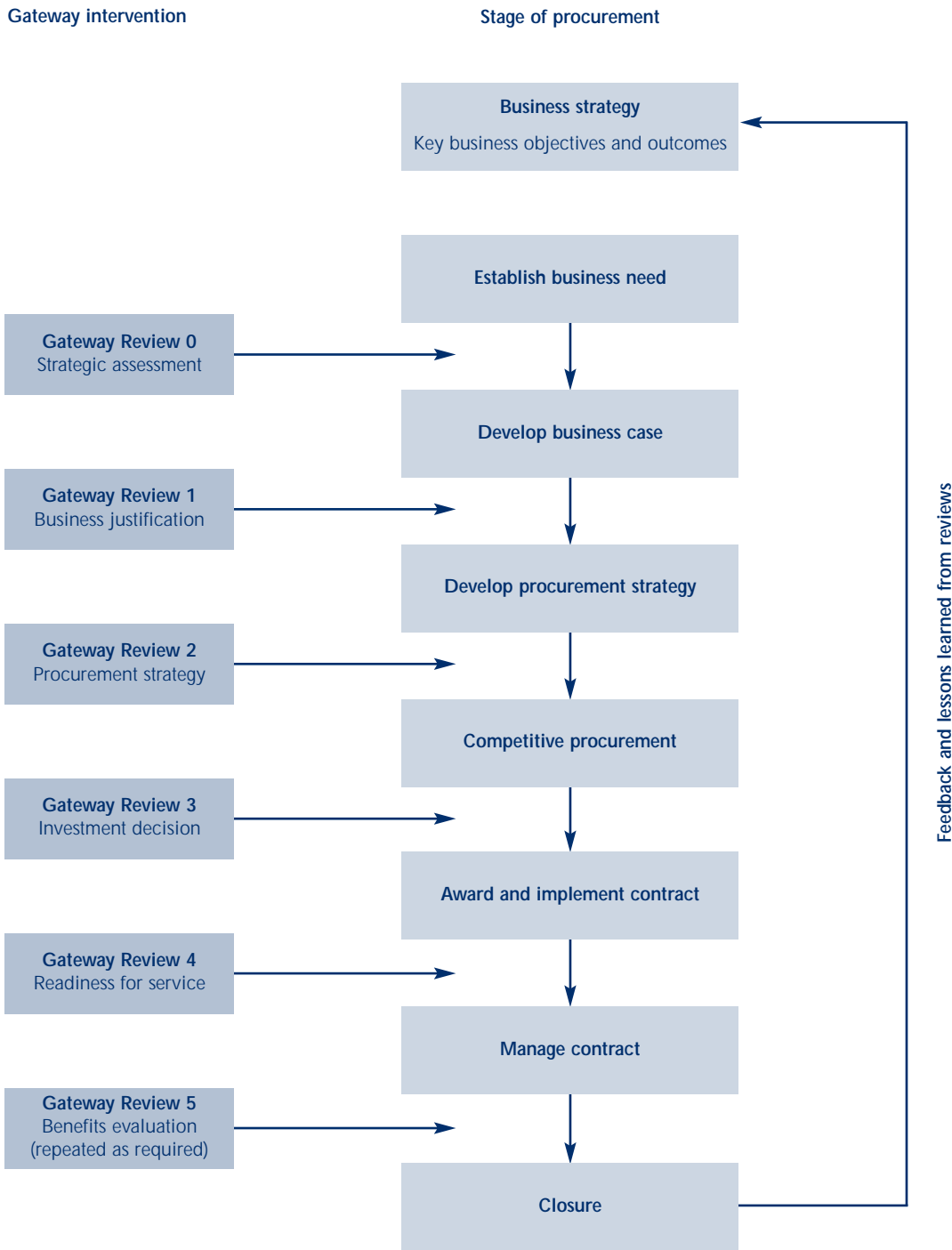
The business case is being refined

- 4.26 In May 2002, the Gateway team agreed that there was a clear business need for the Programme, but work still remained to be done in deciding the cost-benefits of individual elements. Benefits identification and realisation plans are now being developed in preparation for the next Gateway 0 'rolling review' and will help ensure evaluations are based on considerations of quality as well as price.
- 4.27 In December 2001, the Programme's outline business case, produced by the Department's consultants, estimated initial combined costs of over £200 million for electronic identification of cattle and sheep, with annual running costs of over £50 million. The consultants calculated, over a 10-year period, a net benefit to the Department of £82 million (in present value terms) from expenditure of £282 million. For the livestock industry, they estimated a net benefit of £62 million from expenditure of £341 million. Underpinning these calculations were assumptions that the Cattle Tracing System would be upgraded, animal data from other databases consolidated and cleansed, and data would be captured predominantly via the Internet (70 per cent of transactions) and telephone (10 per cent), with electronic tagging of individual cattle, all sheep apart from those going direct to slaughter, and selected pigs. It was also assumed, without detailed supporting analysis at that stage, that there would be, as a consequence, a two per cent increase in keepers' gross margin per animal.

- 4.28 The Department has subsequently refined its calculations of the costs of introducing electronic identification for sheep and goats. In its April 2003 regulatory impact assessment on the European Commission's draft Regulation on sheep, it forecast Year 1 electronic identification costs for the UK sheep industry of £90 million. This comprises set-up fixed costs of around £45 million for readers (£500 for a hand-held reader and £3,500 for a market/slaughterhouse reader) and computers, and annual running costs of around £45 million for fitting electronic identifiers on lambs.

22 The Gateway process

The Gateway process involves expert, independent review of a project at critical points



Source: Office of Government Commerce

4.29 Work remains to be done on the benefits of electronic identification. The December 2001 outline business case anticipated that, by capturing and transferring data accurately and quickly, electronic identification systems had benefits in terms of operational savings for farmers, markets, slaughterhouses and government, as well as faster disease control. Commercial benefits are likely to be greatest for keepers of cattle and sheep breeders. For other sheep farmers, costs are proportionately high, at around eight per cent of the sale price of a lamb.

4.30 In developing the business case for the programme, the Department will need to assess the risk and potential impact of the level of e-take-up being different from its assumptions (paragraph 4.20) and develop contingency plans accordingly. It will also need to consider the likely impact of reforms underway to the Common Agriculture Policy. These changes are likely to reduce the need for checking individual animals against subsidy payments. The extent and nature of 'decoupling' of payments from individual animals is not yet clear, but it is likely that compliance with animal identification rules will be made a condition of future subsidies and information on grazing densities will be needed to check environmental

conditions. The Department does not consider that changes in this area will undermine the business case for the Programme, which has other justifications, in terms of disease control and efficiency.

Implementation is being broken into manageable steps

4.31 The Programme is being implemented in phases and has been broken down into smaller projects. This is in line with recommended practice.⁷

Resources are in place and training underway to develop skills

4.32 Programme funding is in place and a Programme Manager, with experience of delivering a large IT programme, was appointed in March 2003. The Department has established a Centre of Excellence in project delivery and, through identifying skill gaps and developing staff through training, is establishing a pool of experienced project managers.



A calf involved in the Cornwall electronic identification trial: the electronic identification device is contained in the button tag in its right ear.

Appendix 1

Methodology

1 The main methods we used in our examination were

File and management information	<p>We reviewed:</p> <ul style="list-style-type: none"> ■ records and management information held by the Department on current and recent work on livestock identification and tracing, including findings from Cattle Identification Inspections and Sheep Annual Premium Scheme inspections in 2002 and earlier years; and ■ relevant parliamentary, inquiry, European Commission and academic reports.
Interviews, consultation and visits	<p>We met and consulted with:</p> <ul style="list-style-type: none"> ■ staff from the Department's Animal Health Directorate, State Veterinary Service, IT Directorate, Beef and Sheep Division, Investigation Branch, Rural Payments Agency (Carlisle and Northallerton), British Cattle Movement Service and Animal Movements Licensing System team; ■ the Livestock Auctioneers' Association, the Meat and Livestock Commission, the Meat Hygiene Service, the National Farmers' Union, and the National Pig Association; and ■ Trading Standards Departments in Gloucestershire, North Yorkshire, Somerset and Suffolk. <p>We visited Thirsk, Longtown and Carlisle livestock markets, pig farms in Suffolk, a slaughterhouse in Shropshire, Shearwell Data Systems (Devon) and an Electronic Identification Project overseen by Duchy College Cornwall.</p> <p>We accompanied Rural Payments Agency inspectors on visits to five cattle farms in Cumbria and Sheep Annual Premium Scheme inspections of three sheep farms in North Yorkshire.</p>
International comparisons and benchmarking	<p>We visited Holstein UK in Hertfordshire, the Department of Agriculture and Rural Development in Belfast, Northern Ireland, and the Scottish Executive's Environment and Rural Affairs Department in Edinburgh to see different systems in operation.</p> <p>We consulted the Agriculture and Rural Affairs Department of the National Assembly for Wales, the European Commission Directorates-General Health and Consumer Protection and Agriculture, and the European Court of Audit.</p> <p>We obtained information from overseas Agriculture Ministries on their systems.</p>
Stakeholders' views and Expert Panel	<p>We commissioned NOP World to research the views of farmers and others involved in livestock identification and tracking (Appendix 3) and invited comments from stakeholder bodies on our study issues (Appendix 4).</p> <p>We established an advisory Expert Panel comprising:</p> <ul style="list-style-type: none"> ■ Dr David Allen, Beef Industry Consultant and Fellow of the British Institute of Agricultural Consultants. ■ Professor John Alliston, BSc, PhD, CBiol, FRAGS, FIAGR, FIAGR, Dean of the School of Agriculture, the Royal Agricultural College Cirencester. ■ Mr Keith Baker, BVetMed, MRCVS, a former state veterinary surgeon and a past president of the British Veterinary Association. ■ Dr Ian Frood, past vice-chairman of the National Farmers' Union National Livestock and Wool Committee and chairman of Farm Assured British Beef and Lamb. ■ Mr Duncan Sinclair, Beef Economist, Meat and Livestock Commission.





Appendix 2

The Government's response to earlier recommendations on livestock identification

23 Report recommendations and the Government's response

The report	Its recommendations	The Government's response
 <p>Agricultural Committee, First Report 1994-95, <i>Identification and Registration of Farm Livestock (HC83)</i></p>	<ul style="list-style-type: none"> ■ The Department should merge all its database information and network with industry systems to form a national database, mainly funded by industry. ■ Sheep should not be subject to any individual or batch tagging unless for export. Pigs should only require temporary marking for movement. 	<p>A review aimed at rationalising the Department's systems was carried out. They agreed that any national database should not be funded by Government alone, as benefits would also accrue to industry.</p> <p>The Department accepted the recommendations for sheep and pig identification at the time, but subsequently introduced requirements on flockmark and individual identification explained in paragraph 3.4 above.</p>
 <p>Public Accounts Committee, Thirty-Fourth Report 1998-99, <i>BSE: The Cost of a Crisis (HC790)</i></p>	<ul style="list-style-type: none"> ■ A computerised cattle tracing system may have reduced the costs of attempting to eradicate BSE and shortened the life of the export ban. ■ The Department should ensure that controls at slaughterhouses and the operations of the British Cattle Movement Service meet the requirements of the European Commission. 	<p>The computerised Cattle Tracing System was set up in September 1998 to meet European Commission requirements. The Department doubted that the System would have quickened the BSE selective cull procedures, or shortened the export ban, given other conditions.</p> <p>The European Commission was satisfied with Date-based Export Scheme procedures which included controls at approved slaughterhouses and those on cattle identification.</p>
 <p>Public Accounts Committee, Thirty-Eighth Report 1999-2000, <i>Ministry of Agriculture, Food and Fisheries: The Sheep Annual Premium Scheme in England (HC362)</i></p>	<ul style="list-style-type: none"> ■ A mandatory format for flock records should be considered, to increase Scheme compliance, and support animal health and traceability requirements. ■ The Department should meet its target of implementing compulsory identification systems for tracing sheep by the end of 2000 in order to address European Commission concerns that registration and identification rules for sheep, effective from 1 January 1995, were not being implemented in full. 	<p>The Department was to consider whether the format of the flock record should be made compulsory, but has decided against this for now, providing a recommended format which will comply with European Commission requirements instead.</p> <p>From 1 January 2001, legislation was in place for all parts of the UK for the registration and identification of sheep.</p>
 <p>Better Quality Service Review of the British Cattle Movement Service, November 2000</p>	<ul style="list-style-type: none"> ■ The operations of the British Cattle Movement Service should remain in the public sector and be granted Agency status, either alone or as part of the Rural Payments Agency. ■ The British Cattle Movement Service needs to address the issue of high error rates by moving to a system of web-based data entry, and improving the paper-based system. 	<p>In response to the recommendations of the Review, and in the light of experiences in the first year of bovine subsidy cross-checks, the Department merged the British Cattle Movement Service with the Rural Payments Agency on 1 April 2003.</p> <p>The British Cattle Movement Service launched CTS Online on 20 February 2001, enabling web-based data entry by keepers with Internet access.</p>

23 Report recommendations and the Government's response (continued)

The report	Its recommendations	The Government's response
 <p>Report of the Policy Commission on the Future of Farming and Food, January 2002</p>	<ul style="list-style-type: none"> ■ Full electronic traceability of livestock should be achieved as soon as possible. ■ Better systems are needed for sheep and pigs, and the current cattle system needs enhancing. ■ Allowing more electronic data transfer will reduce the paper burden on farmers. ■ The Government should build an up-to-date database of livestock, farming and marketing practices, including research into stocking densities and the implications for disease control. 	<p>The Government accepted the need to improve identification systems for cattle, sheep and pigs. The Department set up the Livestock Identification and Tracing Programme and an Industry/Government Working Group to take the work forward. Extra funding for improving livestock tracking systems was granted in the 2002 Spending Review and measures are being put in place to improve tracing of sheep, pigs and goats through licensing and recording of batch movements.</p> <p>Electronic livestock identification and electronic data transfer are seen as the way forward, but technological advancements and confirmation of European Union requirements on electronic identification are needed before industry-wide implementation is feasible.</p>
 <p>Environment, Food and Rural Affairs Committee, First Report 2001-02, <i>The Impact of Foot and Mouth Disease (HC323)</i></p>	<ul style="list-style-type: none"> ■ The Department should construct a single database based on modern mapping techniques for stock recording. 	<p>The Livestock Identification and Tracing Programme does include a comprehensive database, but for sheep and goats the format is dependent on European Union requirements.</p>
 <p>Foot and Mouth Disease 2001: Lessons to be Learned Inquiry Report, July 2002</p>	<ul style="list-style-type: none"> ■ The Government should develop a comprehensive livestock tracing system using electronic tags to cover cattle, sheep and pigs, taking account of developments at European Union level. 	
 <p>Public Accounts Committee, Fifth Report 2002-03, <i>The 2001 Outbreak of Foot and Mouth Disease (HC487)</i></p>	<ul style="list-style-type: none"> ■ The Department should institute effective checks for unmarked animals and penalise those who deal in them. 	<p>The Department has consulted the industry on a review of pig identification rules with a view to implementing new legislation in late 2003.</p> <p>A Framework Agreement is being piloted with 41 Local Authorities for risk-based enforcement, with results reported regularly to the Department.</p>

Appendix 3

Key findings of NOP World Research

- 1 We commissioned NOP to research livestock industry opinions of current systems for the identification and tracking of cattle, sheep and pigs. The objectives were to explore in detail the views of those involved in the rearing and trading of livestock.
- 2 In-depth interviews were undertaken with six farmers and three vets, and two group discussions were conducted with auctioneers, hauliers, dealers/agents, slaughterhouse managers and meat wholesalers/processors. Fieldwork was conducted in Lancashire, Cumbria and Cambridgeshire early in 2003. Key findings are summarised here.

Understanding of livestock identification and tracking systems

- 3 The roles of the different enforcement bodies were recognised and generally understood for practical purposes. Disease control, essentially in epidemic situations, was seen as the key benefit.

'Tagging and paperwork is basically disease control.'

Focus group member

- 4 There was good understanding of what needed to be done to meet the Department's requirements. The identification and tracking systems were felt to involve considerable paperwork and bureaucracy, but there was wide approval for the tangible aspect of cattle passports, despite the extra paperwork involved.

'The paperwork's worth more than what the beast is.'

Focus group member

How well are current systems working?

- 5 The current system for cattle was considered to be working generally well but there was a belief that the Cattle Tracing System was not sufficiently accurate or up-to-date and complaint at the amount of paperwork (for example that a single sale of an animal through a market required three people to make official notifications).

'It's still an archaic system when you've got to keep sending these *** cards off.'**

Focus group member

- 6 Those involved were familiar with the system and felt there were big incentives to comply with it - subsidy payments were reliant on accurate movement reporting and it was difficult to sell animals without the correct documentation.

'No point in trying to dodge the system or you don't get the money.'

Farmer

- 7 Opinions on the system for sheep movements were mixed. There were problems resulting from the extent and variety of movements of sheep, and compliance was poorer (subsidies for sheep are not linked to identity of animals). There was also uncertainty about the requirements for sheep introduced in February 2003. The simpler system for pigs was thought to work well, except for cull animals (breeding animals no longer required) due to their low value.

'An awful lot of people have broken the rules - not reporting movements.'

Farmer

Industry costs of tracking livestock, and benefits

- 8 Costs to the industry related mainly to the time taken to complete paperwork and checks at all stages, and the cost of eartags. Although farmers and others in the food chain needed a range of identification tools for their own purposes, the official identification and tracking systems did little to meet their requirements and were, to varying extents, an additional activity.

'For official purposes we record the official eartag number of the animal concerned ...but dairy cows have a freeze mark on their backside - it's easier to see! So for day-to-day management, farmers use the freeze brand number.'

Vet

- 9 The key benefit for the livestock industry was recognised to be the control of disease, such as BSE and in epidemic situations. The value of the Animal Movements Licensing System for the latter was recognised. However, there was scepticism about the ability and need to provide traceability of meat products post slaughter.

'Looking at the large picture, yes, there are benefits to the industry because if there is another large disease outbreak we need to know which sheep have gone where and when.'

Vet

Communications with official bodies

- 10 Most routine contact was via post and some respondents reported difficulty in getting satisfaction from the British Cattle Movement Service by telephone. There was currently limited online contact but interest in doing more, subject to concerns about compatibility with farm software and the reliability and security of data. Some respondents commented that the Scottish equivalent of the Animal Movements Licensing System made better use of electronic methods of data transfer.

'BCMS are saying to farmers the slaughterhouse is not providing the information [but] it's them that's losing it - we're sending the movement cards every night.'

Slaughterhouse manager

The future for livestock identification

- 11 There was some support for the idea of electronic tagging for cattle, but a need for more information on how it works, and concern about costs.

'The paper system is unreliable - we need an electronic system or forget about it.'

Focus group member

- 12 For sheep and pigs, electronic tagging was felt to have more limited benefits and to present more practical problems in the accurate reading of microchips and handling of data. Recording the movements of individual sheep or pigs without electronic tagging was strongly rejected as unnecessary and unworkable.

'All the sheep movement licences are in batches - that's as much as they need to know. There's no need to bring in numbered tags.'

Farmer

Appendix 4 Stakeholder views

- 1 We surveyed organisations involved in livestock identification and tracking throughout the food chain to ascertain their views on progress, effectiveness and efficiency of current systems of livestock identification and tracking in England. **Figure 24** lists the organisations that responded to the survey.

24 Organisations commenting in response to our survey

The respondents to our survey included organisations from all parts of the industry

Approved Livestock Identification Manufacturers Association	Assured British Meat
British Meat Federation	British Retail Consortium
British Veterinary Association	Country Land and Business Association
Devon County Council	Earlsmere ID Systems Ltd
English Guernsey Cattle Society	Farmplan Computer Systems
Holstein UK	Livestock Auctioneers' Association
Local Authorities Coordinators of Regulatory Services	Milk Development Council Evaluations Ltd
Meat and Livestock Commission	Mole Valley Farmers
National Beef Association	National Farmers' Union
National Pig Association	National Sheep Association
North Yorkshire County Council	Royal Society for the Prevention of Cruelty to Animals
Scottish Association of Meat Wholesalers	Shearwell Data Systems
Tesco Stores Ltd	

Progress

- 2 Several organisations commented that current systems met European Union requirements and that effective tracing systems were important for disease control and to protect consumer confidence. However, some also commented that, while the Cattle Tracing System met legal requirements, plans to include within it features that would be of benefit to the industry (such as farm assurance) had not yet been implemented. Many expressed concern about European Commission proposals to introduce tracking of the movements of individual sheep, commenting that it cannot be achieved without a workable, low-cost form of electronic identification.

'The systems in the UK meet EU legislative requirements. However, these systems are not effectively delivering what they are intended to achieve and do not meet the industry's longer term business need.'

National Farmers' Union

'It is necessary for Defra and BCMS to involve the other suppliers of IT to the industry at an early stage to ensure standard protocols are used and minimise cost.'

Farmplan

- 3 Electronic identification companies commented that the use of technology and the computer literacy of the farming community needs further enhancing through training and grants for equipment. Investment was being made by the industry but more specific guidance and direction was needed. Companies stressed the importance of close working between themselves, the British Cattle Movement Service and the Department, and to international standards. Earlsmere ID Systems Ltd considers that the Department fails to sufficiently recognise and promote the use of electronic identification technology.

Effectiveness

- 4 Many respondents raised comments on problems with the current systems, including:
- Inaccuracies in the information being held on the Cattle Tracing System, especially involving the recording of movements of animals.
 - Practical difficulties in meeting current identification and tracking requirements and instances of non-compliance, for example where eartags of cattle have clearly been switched to link the animal with a passport of a younger animal.
 - Delays between animal movements taking place and being notified mean that the system cannot be relied upon for tracing fast-moving diseases.

'..we have revealed instances where the eartags of cattle have clearly been switched to ..link .. animals with the passport of a younger animal. The ease with which this can be done undermines not only the effectiveness of the tracking system, but.. can allow potentially unfit meat to enter the human food chain.'

Devon County Council

Efficiency

- 5 Some respondents commented on the scope to improve the efficiency by improving the methods used to allow movements to be reported. Assured British Meat, for example, suggested that the technology used in the Netherlands (where farmers can use a telephone touch-tone system to report movements) was much more cost effective than that used by the British Cattle Movement Service.

- 6 Holstein UK (which maintains pedigree records for several UK pedigree societies and reports information for pedigree animals to the British Cattle Movement Service as an agent for farmers) commented it received most information from farmers by telephone, and considers this both more efficient and cost effective than the mainly postal methods used by the Service. It was also more accurate because information could be checked as it was provided by the farmer, so that errors could be queried with the farmer immediately, while he or she was still on the phone, rather than by correspondence with all the attendant cost and delay. Several respondents also commented on the scope to improve efficiency if more use could be made of e-mail, fax and the Internet. The English Guernsey Society also commented that it would help greatly if it could use information on subsequent transfers of ownership and deaths from the British Cattle Movement Service but had been told this was not possible for data security reasons.

- 7 Several respondents expressed the view that there was poor integration between the official Cattle Tracing System and computer systems used by others in the industry, such as pedigree societies, and with the Department's own systems, such as those used by the State Veterinary Service and the Department's census of livestock.

'..Defra continue to use a plethora of different systems which leads to inconsistencies, inaccuracies and delays at critical times.'

*British Veterinary Association
January 2003*

Appendix 5

Animal identification and tracking in other countries

Cattle databases within the European Union

- 1 All Member States are subject to the same animal identification and tracking requirements. Ten of the fifteen have cattle databases that have been approved as 'fully operational' by the European Commission. This means the level of cattle identification inspections can be reduced from 10 per cent to five per cent of holdings per year and cattle passports are no longer compulsory. Northern Ireland's cattle database was recognised as 'fully operational' in October 1999, but the remainder of the UK system is still without operational status.



- 2 During 2000, officials from the British Cattle Movement Service visited their counterparts in Austria, Denmark, Finland, France, Germany, Ireland, Italy, Portugal, Spain and Sweden. They found (Figure 25) that Britain's system and performance compared unfavourably with those in many of the other states visited.

25 Findings from benchmarking visits in 2000 to ten other Member States

Eartags	<ul style="list-style-type: none"> ■ Costs are up to eight times higher in Britain, because of different approaches to numbering and different supply arrangements. ■ Use of 'leading zeros' on British tags contributes to recording errors. ■ Failure rates are higher in Britain, where there is a greater choice of approved models.
Registering births	Births are often registered quicker and at lower cost in many other Member States because calves are not allowed to move in advance of registration.
Data validation	Rigorous pre- and post-entry validation promoted data quality in some of the other Member States visited, with feedback (through statements) to keepers provided in all other States. In Sweden, there were anomalies in a half of passport applications, as against 30 per cent in Britain and Italy, eight per cent in Ireland, five per cent in France and Germany, and 'very few' in Denmark and Finland.
Movement notifications	Movement anomalies were fewer in many of the other Member States because they required both parties in a trade to identify each other and often to make a joint notification.
Recording deaths	In some States, official vets in slaughterhouses could read from their cattle tracing system, using the information to screen animals for health status, health restrictions and movement anomalies.
Organisation	France, Germany and Spain have regional databases and a linked central database. In Denmark, Finland and Germany, data loading is by private companies or farmer/industry-owned bodies.
Electronic notification	E-mail notification was available in six of the ten states; by website in five; and by phone in five. In Finland, France and Germany, over 50 per cent of transactions were by automatic means.
Efficiency	The ratio of headquarters staff and agents involved in data loading and management to animals registered annually ranged from 1:3,000 in Portugal, 1:5,000 in Britain, 1:10,000 in Austria; 1:12,000 in Sweden, 1:20,000 in Finland to 1:40,000 in Denmark.
Industry access	Keepers had access to their records held in the database in seven of the ten states visited, slaughterhouses in three, and consumers had access in Denmark and France (and now have access in Italy).

Source: National Audit Office analysis of British Cattle Movement Service reports on the visits

Denmark

- 3 The database for the national herd of 1.7 million cattle is maintained by a farmer-owned private company and is funded by farmers paying an annual levy (£1.40 per animal in 2000). It was recognised in May 1999 by the European Commission as fully operational. It is fully integrated, recording events from insemination through to retail sale, and is accessible to government, keepers, slaughterhouses (some with online access) and consumers. Birth and movement notifications can be made by paper (copying pages from the herd book), e-mail, a website or telephone. There are no physical passports.



Finland

- 4 The database for the national herd of one million cattle is maintained by a private company owned by slaughterhouses and dairies with experience in milk recording. It is fully integrated with the subsidy database and was recognised by the European Commission in May 1999 as fully operational. Most notifications are made by electronic means, chiefly through an Internet website and by e-mail and voice or interactive telephony. Over 90 per cent of slaughterhouses are directly connected to the database and notify deaths by e-mail. Keepers receive printouts from the database every two months. There are no physical passports. Keepers are charged around £2.40 (in 2000) per animal, which includes free lifetime eartags.



The Netherlands

- 5 The database for the national herd of 3.8 million cattle has its origins in the 1970s. It was recognised as fully operational by the European Commission in October 1999 and there are no physical passports. Calves receive a unique nine digit number which can be linked to the farm of origin by consulting the central database. Information is only accepted electronically and is checked directly against the database. Farmers make registrations by interactive telephone, with built-in reasonableness checks: report duration averaging two minutes. There is quarterly feedback via statements. Traders and slaughterhouses notify by e-mail and hand-held computers. Eartags are bar-coded to allow automated reading at markets and slaughterhouses. The database includes veterinary information and is integrated with the industry's performance and pedigree database. Keepers pay annual fixed and variable fees, of between 7 to 30 eurocents per animal.



Northern Ireland

- 6 The cattle tracing database originated in the late 1980s to control bovine tuberculosis and brucellosis. Totally re-designed in 1998, as the Animal and Public Health Information System (APHIS), it now provides an all-species database covering movements, disease control and has been substantially upgraded to support the use of back-up data for subsidy claim checking and certification. It holds details of 1.7 million cattle and the flock and herd numbers for 2.3 million sheep and 0.4 million pigs. Cattle information is captured by around 100 Agriculture Department staff based in markets, slaughterhouses and in local offices, inputting information supplied by keepers on paper forms. Births, deaths, and movements to markets and meat plants can be registered online. Slaughterhouses, markets and private vets have access to relevant data on the system via a secure 'extranet' facility. The system supports assurance schemes, through incorporating meat inspection findings, and medicines and residues surveillance programmes.

Cattle identification and recording outside the European Union

- 7 Australia, Canada and New Zealand have national cattle tracing systems, while others, including Argentina, the USA, Botswana and Mexico, are considering such systems.

Australia

- 8 Australia has a cattle herd of 27 million animals. A mandatory tracing system requires use of self-adhesive tailtags bearing a property information code. When cattle are sold a National Vendor Declaration form is completed voluntarily, setting out vendor details, numbers sold and chemical residues there has been contact with. There is no central cattle database. A National Livestock Identification Scheme also tracks cattle using electronic identification in either eartags or boluses. It is voluntary in most states and covers around 4.5 million cattle. A workforce of four is required to run the system as 96 per cent of reporting is electronic.



Canada

- 9 Canada has a herd of 14 million cattle and exports half its beef production. After eradication of bovine brucellosis in 1985, the proportion of animals identified individually fell sharply. Fears about diminishing 'traceback' capability led to the launch of a Cattle Identification Programme. Since 2001, all cattle must be tagged with an eartag approved by the Canadian Cattle Identification Agency (a non-profit industry agency) before they leave their herd of origin and location. Eartags bear individual bar-coded identification numbers, which are recorded at slaughterhouses. Details are entered on a database maintained by the Agency and to which the Canadian Food Inspection Agency has access. Two of the 29 approved tag options are electronic.



Sheep identification and recording

Australia

- 10 Australia has a flock of 113 million sheep and has had a voluntary National Flock Identification Scheme since July 2002. A single permanent eartag is applied to an animal, detailing its birthplace location code, and may be supplemented by the tags of subsequent owners. Eartags are colour-coded according to the year of birth to allow easy identification by age in the field. As with cattle, a National Vendor Declaration form is used, but there is no supporting database.



France

- 11 France has a flock of nine million sheep. Individual identification forms part of France's scrapie plan. A temporary tag is applied at birth and a full button tag after one year, carrying herd number and individual animal number within that herd. Sheep moving between farms and to markets must be accompanied by a form, issued by the local veterinary service, attesting that their farm is brucellosis-free.



Ireland

- 12 Ireland has a flock of five million sheep. Since June 2001, under the National Sheep Identification System, all sheep must be individually identified to allow full traceability, with recording of the individual tag number of every sheep leaving a holding and also when accepted for slaughter. Extra tags must be added, and their numbers recorded, when an animal moves.



Spain

- 13 Spain's national flock of 23 million sheep is the second largest in the European Union. Extensive rearing methods predominate, but with differences from England. Lambs are typically sold for meat when 90 days old (as against 6-12 months old in England) and few sheep are sold at auction markets. Eartags must record the flock of birth and batch movements are notified to the regional authority, authorised by a local vet and recorded in the farm register. A movement document accompanies the sheep. There is no central database of movements, but some regional authorities have databases.

