3. Head-boning and brain removal

Introduction

3.1 Brain tissue was the most infective part of an animal with clinical BSE. When heads of suspect animals were sent to the Central Veterinary Laboratory (CVL) for post-mortem diagnosis, it was recognised at an early date that precautionary handling arrangements were required to minimise the risk of staff coming into contact with brain material. When the bovine brain was designated as specified offal, the slaughtering industry had to consider how to deal with heads and brain material from slaughtered cattle. This chapter looks at the practices that were in place for recovering meat and brains from skulls around 1986, and how these practices changed following the emergence of BSE.

3.2 Before the introduction of the SBO controls, heads of slaughtered cattle had a commercial value. Meat was harvested from them by slaughterhouses, specialist head boners or butchers. The remainder of the head was then sold to renderers. However, by the end of March 1996, just outside the period with which the Inquiry is concerned, the entire bovine head, other than the tongue, was specified bovine material and had to be disposed of accordingly. Instead of profiting from it, slaughterhouses now had to pay renderers for its removal and disposal.

Some features of the industry

3.3 ‘Head-boning’ is the name given to the process of removing the easily accessible meat from the cheeks and from other parts of the bovine head. This meat is generally described as ‘head meat’ or ‘cheek meat’. Slaughterhouses would either harvest this meat themselves or send the head to a specialist boning plant or to a butcher who would perform this task. Specialist head-boning plants operated either as separate sections of large slaughterhouses or as independent entities.

3.4 The precise number of head-boning plants in operation in 1986 is not certain. During 1990 MAFF itself did not appear to know the exact location of specialist head-boning plants for the purposes of inspection. More recent statistics are also difficult to reconcile. Surveillance performed in January and February 1995 recorded visits to 348 slaughterhouses and 24 head-boning plants. It was estimated that the heads of 60 per cent of the weekly national cattle slaughter were being processed in the ten largest specialist boning plants. It was reported that most of these plants were licensed and supervised to a limited extent by the MHS, but that ‘operators may come and go’. A national survey performed three months later in

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148 S184A Meldrum para. F75
149 YB95/3.21.1–1.3
June 1995 recorded visits to a total of 392 slaughterhouses and 43 head-boning plants.\textsuperscript{150}

3.5 The meat obtained from heads was often of poor quality and used in processed foods such as pies and hamburgers.\textsuperscript{151}

**Processes involved in head-boning in 1986**

**Condition of head when sent for boning**

3.6 The butchering of carcasses, including the removal of the head, is described in Chapter 2. The head was skinned and dehorned, the nasal passages and throat cleared of any solid material, and the retropharyngeal lymph node slashed and other deep incisions made in order to facilitate inspection of the head.\textsuperscript{152}

3.7 Tonsils had to be removed from bovine heads as part of the inspection process in export slaughterhouses, where most cattle were slaughtered.\textsuperscript{153} The tonsils of cattle slaughtered in other plants may have remained in the head when it was sent for boning, although the Inquiry did hear evidence that tonsils were always removed before the head reached the head-boning plant.\textsuperscript{154}

3.8 It appears that the tongue was generally removed from heads in the slaughterhouse.\textsuperscript{155} However, the Inquiry also heard evidence of heads being sent with the tongue both to specialist head boners and to butchers who had requested this.\textsuperscript{156}

3.9 The captive bolt stunning of cattle is described in Chapter 2. This stunning process and the subsequent insertion of the pithing rod into the head of slaughtered cattle was a widespread practice that created a hole in the skull.\textsuperscript{157}

3.10 It is unclear whether heads were occasionally provided for boning with the brain removed before 1986. This did occur on occasions in the period following the introduction of the SBO controls (particularly when heads were sent from slaughterhouses to specialist head-boning plants), and it appears possible that this may have occurred on limited occasions in the period before the emergence of BSE. The manner in which brain removal was performed is addressed below.

**Transport of heads for boning**

3.11 Those larger slaughterhouses that also boned the heads of cattle had a special section in the same premises but away from the slaughter line.

\textsuperscript{150} YB95/7.6/1.4 (although the survey identified a discrepancy between the number of head-boning plants currently operating and the number identified in previous surveys; these inconsistencies were to be pursued – YB95/7.6/1.1)

\textsuperscript{151} YB95/03.31/4.2

\textsuperscript{152} YB96/3.23/1.5

\textsuperscript{153} S44 Proud para. 7

\textsuperscript{154} T62 p. 115 – Ms Hovi, Official Veterinary Surgeon. But see YB89/03.06/4.2, which describes an abattoir where the tonsils remained in the head

\textsuperscript{155} T62 p. 122; YB89/03.06/4.2

\textsuperscript{156} T58 p. 126

\textsuperscript{157} T12 pp. 131–2
3.12 The Inquiry heard that heads were often transported together in bulk to the premises where they were to be boned:

. . . the heads were removed off the hooks where they were hung in the slaughterhouse and they were thrown basically in a cold van in which they were removed to the head-boning plant and they only transported heads at the time . . . they still had the head meat that was going to be recovered mechanically at the head-boning plant.\(^{158}\)

**Harvesting of head meat**

3.13 Specialist head-boning plants removed the meat by a labour-intensive process using a circular electrical knife. Ms Hovi, an Official Veterinary Surgeon, had seen several head-boning plants in operation in several countries:

I have never seen a machine removing the meat from the head; it is usually a man who has a circular saw. It is very fast, they do not waste time processing one head.\(^{159}\)

**Removal of the brain from the head**

3.14 The extent to which brains were removed before 1986 is discussed in the Annex to this chapter. Where this happened, it was more likely to have been done after the head meat had been harvested, rather than before. The practices described below are primarily taken from observations made by Mr Stephen Hutchins, a MAFF Senior Veterinary Officer, in a report he prepared in February 1990.\(^{160}\) In the absence of any description of brain removal before 1986, the methods employed are assumed not to have changed.

3.15 The removal of the brain is difficult because of the strength and thickness of the cow’s skull. Nonetheless it can be performed in a number of ways, not all of which involve splitting the skull:

(i) **Oblique cut through the rear of the skull by an electric or manual saw**

3.16 In this method a cut was made from just in front of the captive bolt hole to a line just above the foramen magnum (the cavity at the base of the skull). This cut could be made with either an electric saw or a manual saw. The brain generally retained its structure and was then ‘shelled out’.\(^{161}\)

(ii) **Splitting the skull with a band saw**

3.17 After removal of the head meat, the skull was fed upside down and back-to-front through a vertical band saw. The skull was split longitudinally in a vertical plane, bisecting the brain along the mid-line.\(^{162}\)

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\(^{158}\) T62 pp. 108–9  
^{159} T62 p. 123  
^{160} YB90/2.9/1.1–1.3  
^{161} YB90/2.9/1.1  
^{162} YB90/2.9/1.2
(iii) Splitting the skull with a specialised tool

3.18 According to one veterinarian:

There is a patent tool which will actually split it [the skull], which you can wind down and put pressure on.\(^{163}\)

3.19 The Inquiry also heard evidence of the use of a mechanical cleaving machine, which appears to have been a similar device.\(^{164}\) It was suggested as well that a specialised guillotine had been employed to split heads.\(^{165}\)

(iv) Splitting the skull with a hand-held cleaver

3.20 The practice of splitting heads with cleavers has never been widespread and a number of witnesses told the Inquiry that bovine skulls could not be split in this way.\(^{166}\) Other witnesses, however, stated that they had seen this method employed in smaller slaughterhouses:

I think mainly the abattoirs I worked in in Lincolnshire were smaller type beef abattoirs and they would use a cleaver to actually go in an A shape on to the head to chop out the front of the skull to remove that brain.\(^{167}\)

Brains were removed by use of a cleaver, and being scooped out by hand by the slaughtermen.\(^{168}\)

(v) Expulsion of the brain by a jet of water or air

3.21 This method did not require the head to be split. Rather, it relied upon the use of a powerful jet of hot water or air to expel the brain tissue through the cavity at the base of the intact skull (the foramen magnum). The jet would be generally introduced first via the captive bolt hole and later through the foramen magnum.\(^{169}\)

(vi) Suction of the brain through the captive bolt hole

3.22 This method involved removal of the brain by means of suction through the captive bolt hole.\(^{170}\) Mr Carrigan told the Inquiry that he did not believe that brain removal was possible by this method.\(^{171}\)

Rendering of skulls

3.23 Once the head meat had been removed, the skulls – including eyes and brains (where the brain had not been removed) – were disposed of to renderers. Renderers collected them from slaughterhouses, boning plants or butchers. Mr Richard

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\(^{163}\) T62 p. 17 – Dr William Swann, MHS

\(^{164}\) T58 p. 126

\(^{165}\) IBD1 tab 7 p. 116

\(^{166}\) T62 p. 18; T58 p. 41; T58 pp. 124–5

\(^{167}\) T62 p. 20 – Mr Christopher Clark, Authorised Meat Inspector, MHS

\(^{168}\) T64 p. 57 – Mr Richard Lodge, Birmingham City Council

\(^{169}\) YB90/2.9/1.1; On 22 May 1990, Mr Keith Baker, Assistant Chief Veterinary Officer at MAFF, wrote to all Divisional Veterinary Officers stating that reports had continued to be received about bovine brains being removed at some slaughterhouses using high pressure water hoses. He advised that this method was unacceptable ‘in view of the extent of splashing of brain tissue and water that occurs’ (YB90/5.22/8.1)

\(^{170}\) YB90/2.1/2.4

\(^{171}\) T58 pp. 43–4
Cracknell, representing Anglo Beef Processors, explained to the Agriculture Committee of the House of Commons in June 1990 that, prior to the introduction of the SBO controls, the head would go to the renderers ‘with the bones’ and that slaughterhouses would usually be paid for such material according to its weight.\textsuperscript{172}

**Legislative changes and developments in the process post-BSE**

**Bovine Offal (Prohibition) Regulations 1989 (the 1989 SBO Regulations)**

3.24 The 1989 SBO Regulations (or SBO ban) came into force on 13 November 1989.\textsuperscript{173} They prohibited the sale or ‘use in the preparation of food for sale, for human consumption’ of any Specified Bovine Offal (SBO). Bovine brain was included as SBO.

3.25 The 1989 Regulations also required the immediate staining or sterilisation of SBO. However, this did not apply to a brain which was still within a head that was going to be removed from the slaughterhouse to a specialist boning plant for the recovery of meat (other than SBO).

3.26 After removing the meat the head-boning plants had either to:

- sterilise or stain the skull (with the brain still inside); or
- remove the brain from the skull and then sterilise or stain the brain.\textsuperscript{174}

3.27 The definition of ‘specialist boning plant’ in the 1989 Regulations was limited to premises (not being a slaughterhouse or knacker’s yard) where a business of removing meat from bones was carried on. This also excluded the premises of retail butchers.

3.28 Although the 1989 Regulations referred to removal of the brain from the skull, they were silent as to how this was to be achieved. No other instruction or guidance was provided to slaughterhouses or boning plants on the appropriate method of brain removal. The various methods which they did employ are described above. The removal of the brain could be performed:

- at the slaughterhouse, before or after the removal of the head meat by the slaughterhouse;
- at the slaughterhouse, prior to sending the head to a specialist boning plant or butcher for removal of the head meat; or
- at the specialist boning plant, before or after the removal of the head meat by the plant.

\textsuperscript{172} IBD1 tab 7 p. 117
\textsuperscript{173} The Bovine Offal (Prohibition) Regulations 1989 (L2 Tab 3A)
\textsuperscript{174} L2 tab 3A, Regulation 13
The effect of the 1989 Regulations on the treatment of bovine heads

3.29 The 1989 Regulations had a significant effect on the head-boning industry. Although brain was SBO, the rest of the head was not. However, if the brain remained in the head, the entire head had to be treated as SBO. Hence once the head meat had been removed, the head was of no value. Indeed slaughterhouses and specialist boning plants faced the prospect of paying renderers to collect heads rather than receiving income for them. 175

3.30 This prospect stimulated the practice of brain removal. As the Agriculture Committee of the House of Commons put it:

This practice was accentuated by the introduction of the specified offals ban: abattoirs perceived an economic advantage in attempting to remove the brain from the skull since, by removing the brain, they would have to pay renderers less to take the heads. 176

3.31 Removal of the brain at the slaughterhouse also made the head a more commercially attractive proposition for boning plants, which would then not have to deal with the disposal of any SBO. By February 1990, head-splitting at slaughterhouses was being described in correspondence to the Minister as ‘fairly widespread practice in the South West’. 177

3.32 Some head-boning plants also began to remove brains from bovine skulls in order to avoid the restrictions imposed on the movement of entire heads. 178

3.33 When giving evidence to the Agriculture Committee of the House of Commons in June 1990, Mr Richard Cracknell explained the rationale behind the practice:

It has not been normal in our industry in the UK, until the last six months, for us even to consider splitting of heads. Specified offals have never really formed – and the very description of them as offals conjures up thoughts of kidney, heart, liver – good-quality offals. These are specified organs in which there has never really been a commercial trade in this country. The reason for splitting of heads – and all of us have looked at, and have experimented with, splitting of heads in recent weeks – is simply that the renderers are charging us £80 a tonne for removal of specified offals, the brain being one of them, and they are only charging us £20 to £50 a tonne for unspecified offals. So there was good commercial sense for looking at ways of removing the brain from the head. I think we have all come to the conclusion that in fact it is not worth the bother, and that we will have to send the head with the skull and the brain in it, with the proscribed offals. But that is going to cost us. At £80 a tonne, a skull probably weighs about 25 pounds, so that is 90 pence at least, and that is part of the carcass that we were being paid for; it went out with the bones until six months ago. So there is a loss probably of something around £1.30 at least on that . . . I would like to make

175 T58 p. 51
176 IBD1 tab 7 p. xvii
177 YB90/2.23/3.1
178 YB90/2.1/2.4; YB90/2.9/1.1
it clear that the reason for head-splitting has been that separation. There has never really been a trade in brains. 179

3.34 Meanwhile, it appears that some butchers wished to continue to have the heads of slaughtered animals returned to them. 180 Butchers were not ‘specialist boning plants’ for the purposes of the 1989 Regulations. 181 As a consequence, bovine heads could not be returned to butchers unless the brain was removed first, and it appears that some slaughterhouses began to remove the brain so that the rest of the head could be provided to the butchers:

Furthermore, the practice of removing the brain from the skull appears to be a necessary one for many small slaughterhouses who undertake contract killing on behalf of butchers who demand the return of the bovine head. 182

3.35 Storage of bovine heads containing brains also posed problems, particularly for smaller slaughterhouses. This issue was raised by the Institution of Environmental Health Officers (IEHO) in a letter to MAFF dated 1 February 1990:

In smaller abattoirs adequate refrigeration facilities, capable of containing the bulk, is not available. Unrefrigerated storage, whilst acceptable in the cooler months of the year, will lead to rapid deterioration of the heads in the summer months with subsequent condemnation and loss of income to the butcher (for cheek meat). It is not practicable for small abattoirs to build further refrigerated storage for these heads and the loss of income could, in the long run, cause financial problems. 183

3.36 In summary, removal of bovine brain was undertaken by some slaughterhouses in response to the 1989 Regulations for the following reasons:

- It enabled the remainder of the head to be sold to renderers, thus reducing the amount of SBO which slaughterhouses were required to pay renderers to dispose of.
- It enabled the return of heads to butchers who required the remainder of the head for cheek meat.
- It made the head a more commercially attractive proposition for boning plants, eliminating the need for them to deal with the disposal of any SBO.
- It reduced the cost of storing heads and transporting them to specialist head-boning plants.

3.37 An MLC survey in June 1990 of 309 slaughterhouses found that 81 per cent of bovine heads were despatched from abattoirs ‘untouched’. Of the remainder, the only treatment in the slaughterhouse in the majority of cases was the removal of the cheek meat from the heads, leaving the brain in the skull to be sent out as proscribed offal. In only 33 slaughterhouses – 10.7 per cent of those surveyed, accounting for less than 4 per cent of British cattle slaughtering – was removal of the brain from

179 IBD1 tab 7 p. 117. In his evidence to the Inquiry, Mr Hutchins also acknowledged the commercial imperative behind brain removal following the introduction of the 1989 Regulations: S86 Hutchins para. 16
180 T58 p. 124; YB90/2.1/2.4; YB89/9.25/1.50
181 M41 tab 5: The Federation of Fresh Meat Wholesalers Newsletter, December 1989
182 YB90/2.1/2.4
183 YB90/2.1/2.8
the head of carcasses attempted.\textsuperscript{184} This survey did not, however, take account of the incidence of head-splitting at the specialist head-boning plants to which some or all of the 81 per cent of ‘untouched’ heads were dispatched.

**Possible contamination of head meat by bovine brain during transport of heads for boning**

3.38 The presence of head meat on heads while they were transported to a head-boning plant or butcher raised the possibility of contamination of this meat with bovine brain material. The Inquiry heard that while the heads were in transit, brain material could leak through the captive bolt hole in the skull onto the head meat:

> The leaking of the brain material through the stunning hole was quite evident at this, when this process was being done . . . It was quite obvious, we both observed this at the time, that brain material was leaking onto the cheek meat that was then going to be recovered for human consumption at the boning plant.\textsuperscript{185}

3.39 The Inquiry also heard evidence of heads being transported with other meat, raising similar concerns about possible contamination of this meat in transit.

> The heads were taken away for further processing from our abattoir. I think the only problem that worried me about it was the contamination of those heads with other meat shipped at the same time, and also contamination from the captive bolt hole in the head as well, the contents would come out of the hole. I tried to be very strict in the way they were transported, those heads, but unfortunately you were not always able to supervise it.\textsuperscript{186}

**1990 MAFF Advice on bovine brain removal**

3.40 The evidence obtained by MAFF about the contamination hazard which arose when the brains were being removed from skulls prompted a review of the practice. While extensive consideration was being given to banning brain removal, MAFF favoured the provision of guidance to local authorities rather than amending the 1989 Regulations to control the practice or ban it completely. The handling of this issue by MAFF and by SEAC is examined in vol. 6: *Human Health, 1989–96* and vol. 11: *Scientists after Southwood*.

3.41 On 14 June 1990, Mr Keith Meldrum, the Chief Veterinary Officer at MAFF, sent a telex to all Divisional and Regional Veterinary Officers, Regional Meat Hygiene Advisers and Divisional Executive Officers (‘the 1990 MAFF Advice’) advising that:

> As a result of a detailed evaluation of practices currently in use in slaughterhouses and boning plants the Ministry of Agriculture, Fisheries and Food has concluded that bovine head meat must be recovered from the intact skull before the brain is removed.\textsuperscript{187}

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\textsuperscript{184} YB90/6.20/3.1. An internal MAFF document written in late June 1990 stated that ‘fewer than 8%’ of slaughterhouses were splitting heads in order to remove the brain: YB90/06.26/11.1.

\textsuperscript{185} T62 pp. 108–9 – Ms Hovi, Official Veterinary Surgeon; the Inquiry also heard similar evidence from Professor Jeffrey Almond (T12 p. 132).

\textsuperscript{186} T62 p.167–8 – Mr Keith Burgess, Official Veterinary Surgeon.

\textsuperscript{187} YB90/6.14/3.3; S184A Meldrum para. F61
Effect of the 1990 MAFF Advice on the treatment of bovine heads

3.42 A summary by Mr Hutchins on 5 April 1991 of returns from a survey of SBO-handling in slaughterhouses that processed cattle disclosed that about 20 per cent of them were removing brains on site, and around 70 per cent were reported to be sending intact skulls to specialist boning plants. The remaining 10 per cent appeared to be sending the intact skulls to renderers, but not all of them were complying with staining, sterilisation or permit requirements.\textsuperscript{188}

3.43 Mr Hutchins noted that various methods and implements were being used to remove the brains from the skulls, but that these did not appear to be causing any significant problems. There was generally a high degree of compliance with the 1989 Regulations. However, a reference to head meat being ‘generally removed prior to brain removal’ suggested a high but not total compliance with the 1990 MAFF Advice.\textsuperscript{189}

3.44 Follow-up surveys on compliance with MAFF’s Advice, carried out in May and June 1991, revealed that there had been ‘a fall in the number of abattoirs sending skulls to boning plants and a corresponding increase in abattoirs removing the brains themselves’.\textsuperscript{190} In some cases the brain was being removed before the head meat was harvested. The ‘undesirability’ of this was discussed with the operators and the local authorities.

Bovine Offal (Prohibition) (Amendment) Regulations (the 1992 Regulations)

3.45 The 1992 Regulations came into force in England and Wales on 12 March 1992, and three days earlier in Scotland. These amended the 1989 Regulations in the following ways:

- they prohibited the removal of any meat for human consumption from the head of a bovine animal after the skull had been opened or the brain had been removed;\textsuperscript{191}
- they prohibited the removal of the brain from the head of a bovine animal in a slaughterhouse or boning plant except in a specific area which at no time was used for food for human consumption;\textsuperscript{192} and
- they permitted those bovine heads from which the brain had not been removed to be moved under a movement permit to premises of a processor or a place of storage before transfer to a processor.\textsuperscript{193}

3.46 No comparable legislation was introduced for Northern Ireland, but similar standards were adopted and enforced administratively by the Department of Agriculture for Northern Ireland.\textsuperscript{194}
Effect of the 1992 Regulations on the treatment of bovine heads

3.47 The 1990 MAFF Advice had now been given statutory force: if head meat was to be removed for human consumption, it had to be harvested before the brain was removed from the skull. This meant that heads could no longer be returned to butchers for the recovery of head meat, since they were not ‘specialist boning plants’ under the legislation and heads containing brains could not be sent to them.

3.48 Slaughterhouses were continuing to send heads to specialist plants for boning. A survey undertaken in January and February 1995 identified 24 specialist head-boning plants with a combined weekly throughput of 37,710 heads. Based on the average national weekly cattle slaughter figure at that time (57,000), it was estimated that the throughput of the ten largest head-boning plants accounted for 60 per cent of all slaughtered cattle.¹⁹⁵

3.49 Some slaughterhouses appear to have continued removing brains in the period following the introduction of the 1992 Regulations.¹⁹⁶ Presumably this brain removal and the storage of split heads (which was also observed) was performed to enable the remainder of the head to be rendered as non-SBO material.¹⁹⁷

3.50 Between 31 May and 23 June 1995, the State Veterinary Service (SVS) undertook national surveillance of all the slaughterhouses and head-boning plants processing bovine animals, in order to ascertain the extent of compliance with the SBO controls. The results confirmed that at least one slaughterhouse was in breach of the 1992 Regulations by removing brains before boning the heads.¹⁹⁸

Specified Bovine Offal Order 1995 (the 1995 SBO Order)

3.51 On 15 August 1995, the 1995 SBO Order came into force. Under this Order, brain removal for any purpose other than veterinary or scientific examination (ie, to enable cheaper transport of heads or to permit skulls without brains to be rendered) was no longer permitted.¹⁹⁹

3.52 Following the introduction of the 1995 SBO Order, the slaughterhouse was required to ensure that the head of any animal 6 months old or over was separated from the rest of the carcass.²⁰⁰ The slaughterhouse was then required to:

- treat the entire head, including the brain, as SBO; or
- remove the meat from the head on the premises without disturbing the skull and then treat the whole skull (including the brain) as SBO; or
- keep the head separate from all other animal material and send it to a specialist head-boning plant.²⁰¹

¹⁹⁵ YB95/3.2/1.3
¹⁹⁶ S71B Bradley para. 93
¹⁹⁷ YB95/8.3/2.1–2.2; YB95/7.28/7.1–7.3
¹⁹⁸ YB95/7.6/1.4–1.13; It was subsequently reported that this particular plant was a ‘very small village premises slaughtering two young animals a week, and that the meat from the heads from which brains were being removed first is used for pet food’ (YB95/7.125/5.2)
¹⁹⁹ L2 tab 13, article 10
²⁰⁰ L2 tab 13, article 6(1)
²⁰¹ L2, tab 13, article 6(5) & 6(6)
3.53 Head-boning plants had to be approved by MAFF and, upon the arrival of heads for boning, had to record details of the number of heads delivered to the premises, the date of delivery and the source of the heads. Upon removal of the head meat, the skull had to be treated as SBO and be kept separate from other animal material, stained and then disposed of by an approved rendering plant, collection centre or incinerator.\textsuperscript{202}

3.54 However, provision was made in the 1995 SBO Order for a new definition of ‘skull’, which was intended to go some way towards meeting the expense which slaughterhouses and boning plants faced in disposing of the head as SBO to renderers:

The skull was defined to exclude the bones of the lower mandible, the hyoid apparatus, and those anterior to a transverse section between the posterior molar teeth of the upper jaw and a point 30 mm anterior to both orbits. This definition reduced the weight of bone which had to be disposed of as SBO, so reducing costs, and was included on my recommendation after Mr Bradley and I had visited a head-boning plant to assess the practicability and safety of the technique.\textsuperscript{203}

3.55 In November 1995, as part of its ongoing surveillance, the SVS made 26 visits to specialist head-boning plants to assess the level of compliance with the SBO controls. At only one visit were the practices considered unsatisfactory.\textsuperscript{204} However, in late November 1995, a veterinary officer in Leicester noted that a renderer in the area was receiving ‘occasional unstained heads, including brains’ amongst its incoming raw material.\textsuperscript{205}

3.56 It appears likely that the concerns regarding head-splitting and, in particular, the possibility that the practice might lead to contamination had an adverse effect on the demand for head meat. Mr Michael Wildman, on behalf of Sainsbury’s supermarkets, told the Inquiry:

I seem to recollect that we have always precluded the use of head meat in any of our products. I seem to recollect at the time there was a requirement that the head be split and the brain tissue be removed. I can only conclude there was a concern that the material may be spread to the meat.\textsuperscript{206}

3.57 The reduction in demand for head meat and the increase in slaughterhouses performing their own head-boning had a detrimental impact on the business of specialist head-boning plants.

The 1996 Order

3.58 The Specified Bovine Material Order 1996 (‘the 1996 Order’), which came into effect on 29 March 1996, is just outside the terms of reference of the Inquiry but is included here to complete the story. The entire bovine head (including the brain but excluding the tongue) became ‘specified bovine material’ (SBM). The
Order regulated SBM in a similar way to that in which SBO was regulated by earlier legislation.

3.59 The 1996 Order affected disposal of heads by slaughterhouses. The entire head, including the head meat, had to be stained in the slaughterhouse and sent intact to renderers for disposal. The harvesting and sale of head meat, once a significant part of the slaughtering industry, ended upon the introduction of the Order.

3.60 As a result, head-boning no longer had a role in the meat industry.
Ms Janet Nunn, Director of Food and Drink in the British Retail Consortium, told the Inquiry:

> You have to remember of course that there are always job implications in due course, people like the Head Boners’ Association closed down as people were not taking head meat and so on.207

ANNEX TO CHAPTER 3: Brain removal prior to the introduction of the SBO controls

Use of brain in products for human consumption

3.61 The predominant reason for removing bovine brain in 1986 was to use it in food for humans or animals. The use of bovine brain in food was governed by the Meat Products & Spreadable Fish Products Regulations 1984. The position was summarised by Mr Charles Cockbill of MAFF in the period leading up to the introduction of the 1989 SBO Regulations:

> . . . the current legal position is that brains can only be used in meat products which are cooked although they would not be prohibited from being sold in their raw state in for example, a butcher shop. In the latter case however they would have to be sold under the name of brain. Where however they are used in a cooked product they may either be indicated in the ingredients list of that product under the name brains or under the generic term offal. This situation is set out clearly in schedule 3 to the Food Labelling Regulations 1984.208

(i) Use of brain in processed meat products

3.62 The extent to which bovine brain was used in meat products for humans before 1986 remains a somewhat vexed question. In an article published in the British Medical Journal in June 1986, Dr Timothy Holt and Ms Julie Phillips suggested that the use of bovine brain in food may have been more widespread than previously thought.209 Dr Holt explained the basis for this suggestion:

> Julie Phillips was able to provide some evidence that potentially infective [central nervous system] tissue was entering the human food chain and

207 T63 p. 135
208 YB88/12.12/3.1
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despite a letter from Philip Mobsby of the Bacon and Meat Manufacturers’ Association, who stated (1.12.87) that he knew of no examples where cows’ brains were used in human food products, we felt we had a strong enough case to argue that human consumers were at risk.210

3.63 More recently it has been asserted by Mr J Verdrager in The Lancet that:

. . . most adolescents and young adults have eaten liquefied [bovine] brain tissues because industrially prepared bovine brain-pool homogenates were used (before specified bovine offals were banned in the UK in 1989) as binding agents for the preparation of hamburgers, sausages, vol-au-vent, and so on.211

3.64 Information was given to the Southwood Working Party on the question whether bovine brain was being used in products such as pies.212 MAFF’s Meat Hygiene Division advised in November 1988 that bovine brains were not used in processed meat products.213 However, later that month Sir Richard Southwood attended a MAFF ministerial meeting at which the Chief Veterinary Officer, Mr Meldrum, said that while most bovine brains were not harvested, ‘some were used in meat pies and Cornish pasties’.214

3.65 Some witnesses before the Inquiry made reference to the use of brain ‘as packing in certain types of meat pies’215 and to its inclusion in gravies, beefburgers and sausages.216 The Inquiry also heard anecdotal evidence that pâtés, tinned items and stock cubes were composed in part of bovine brain.217 Mr Wildman, on behalf of Sainsbury’s supermarkets, said that before 1989 Sainsbury’s stores sold a ‘very few products’ containing brain tissue such as ‘brawn’ (a cooked, potted meat).218

3.66 A report prepared for MAFF in May 1997 relating to the period between 1980 and 1989 stated that ‘no evidence (other than anecdotal) has been found for the use of cattle brain in meat products’.219 It found that while it would have been technically feasible to incorporate up to 5 per cent of bovine brain tissue in a meat product, the cost of removing it from the skull would make such practices unlikely on an industrial scale. The report also responded to the claim by Mr Verdrager, noted above, that bovine brain homogenates were used as binding agents. This was dismissed as ‘most unlikely’, since the poor binding properties of brain tissue would not have justified the considerable effort involved in brain removal.220

3.67 During the consultation period in 1989 before the introduction of the SBO ban, MAFF was told by the Bacon and Meat Manufacturers’ Association that a survey of its members (who then produced about 80 per cent of the meat products sold in the UK) confirmed that bovine brain was not used in meat products.221 The advice

210 S20 Holt para. 5
212 See vol. 4: The Southwood Working Party, 1988–89
213 YB88/11.17/1.1, 2 As well as two MAFF Ministers (Mr John MacGregor and Mr Donald Thompson), this meeting was attended by Sir Donald Acheson (the Chief Medical Officer), Sir Richard Southwood and Mr Meldrum, among others
214 T23 pp. 76–9
215 T15 pp. 76–9
216 S410 Grant para. 4
217 S166 Wildman paras 3–4
218 The Leatherhead Report, Audit of Bovine and Ovine Slaughter and By-Products Sector (Ruminant Products Audit)’ (IBD5 tab 17)
219 The Leatherhead Report, Audit of Bovine and Ovine Slaughter and By-Products Sector (Ruminant Products Audit)’, p. 8 (IBD5 tab 17)
220 YB89/5.22/1.1–1.3
of Mr Cockbill of MAFF at the time regarding the use of brain in human food was as follows:

Information from the trade is that beef brains are not used in meat products. For bovines, heads are removed at the abattoir and sent for rendering; it is understood that there are practical difficulties in extracting bovine brains which thus operates against their use. Therefore, suggestions that they are used in a whole range of uncooked products, such as sausages, burgers and pies are not only probably untrue but also such products are illegal.222

3.68 Witnesses involved in the slaughtering industry stated that bovine brain was rarely, if ever, used in processed foods destined for human consumption. Mr Hylton Oberst, the Director-General of the MLC between 1979 and 1992, told the Inquiry that he had no knowledge of bovine brain being used in the manufacture of meat products in his 40 years in the industry.223 The evidence from Mr Peter Carrigan of Specialpack Ltd about his 37 years in the meat industry was similar:

I was absolutely amazed that anyone could believe that brain, spinal cord, thymus, spleen or tonsils went into human food anyway. I had worked in the food industry, and every aspect of the meat industry, and for frozen food companies and for national well-known High Street superstores; and I was absolutely amazed that anyone should put that proposal forward, because I can only speak for what I know, but I am totally unaware of any food products being made from brain and spinal cord.224

(ii) Sale of brain for human consumption

3.69 In their article in the British Medical Journal, Dr Holt and Ms Phillips stated that:

\[\ldots\] it has always been possible to buy raw [bovine] brain over the counter in butchers’ shops as an ingredient for stews and casseroles, quite popular among elderly people.225

3.70 Dr Holt explained the basis for this assertion:

[Ms Phillips] quite simply got on the phone and rang half a dozen butchers in south London and found out whether they sold brains to people, and found out that they did, some of them did.226

3.71 Sir Richard Southwood found that one could occasionally purchase an ox brain if one wanted to, but it would be difficult because most were destroyed during the slaughter process.227 Members of the slaughtering industry told the Inquiry that brains were not consumed in significant numbers in the UK and that the only real market that existed for them required the export of the bovine heads to France.228

222 YB89/05.25/11.1–11.2
223 T59 pp. 60–1
224 T58 p. 22
226 T14 p. 62
227 T106 p. 131
228 T58 pp. 104–6
3.72 The study undertaken for MAFF in May 1997 surveyed independent and multiple butchers in England and Wales about their use of bovine brains. None of the respondents reported the use of brain in other meat products, but a proportion of them had sold ox-brains direct for human consumption. Based on the survey responses, it was estimated that in the early 1980s some 270,000 ox-brains a year may have been sold for this purpose. According to MAFF statistics on the number of cattle slaughtered in 1980 (4,255,100), this number of brains accounted for 6.34 per cent of the total cattle slaughtered.229

3.73 On the European continent it appears that brain was used in the production of German sausages. A survey undertaken by the University of Giessen and reported in 1999 involved a detailed biochemical analysis of over 500 samples of sausage. Based on estimates of the content of brain-specific lipid, it was found that up to 5 per cent by weight could be brain or other material from the central nervous system. It was noted that these sausages contained brain illegally as German Regulations prohibited the use of brain in meat products at that time.230 It is possible that, before 1988, similar sausages manufactured by butchers in the UK would have contained the same ingredients.

3.74 The Leatherhead Report estimated that, with the decline in the number of butchers during the 1980s, the number of brains being sold direct for human consumption would have fallen to a figure closer to 100,000 by 1989. Some of these brains (perhaps 25 per cent) might have been fed to pets. The Report also referred to a 1982 estimate that 30 per cent of all cattle brains in 1978 went for retail sale for human consumption or pet food.231

3.75 There has been speculation as well that some cattle heads were milled whole (including the brain) to produce a slurry for use in pet food.232 The Inquiry heard no evidence in support of this proposition.

Head-splitting before 1986

3.76 The extent to which brain was used in foods prior to 1986 appears likely to explain the low level of head-splitting during this period. If brains were not often eaten, few would have been removed, particularly when the difficulty of removal is considered.233

3.77 In evidence provided to the Agriculture Committee of the House of Commons in June 1990, Mr Richard Cawthorne, then Chairman of the British Meat Export Council, had the following to say regarding the prevalence of the practice of head-splitting for the purpose of brain removal:

To begin with, sir, the furore about the splitting of beef heads is very largely a myth. I first went in an abattoir in 1960 and I have been in a great many ever since. I have never seen a split head in an abattoir. I have been in abattoirs in Australia, the USA, all over Europe, North Africa and the Middle

229 The Leatherhead Report, ‘Audit of Bovine and Ovine Slaughter and By-Products Sector (Ruminant Products Audit)’, pp. 7–8 (IBDS tab 17)
230 Abstracts from a ‘Symposium in Characterisation and Diagnosis of Prion Diseases in Animals and Man’, Tübingen, 23–25 September 1999 (later reported in the New Scientist, 4 March 2000, p. 7)
231 The Leatherhead Report, ‘Audit of Bovine and Ovine Slaughter and By-Products Sector (Ruminant Products Audit)’, p. 7 (IBDS tab 17)
232 The Leatherhead Report, ‘Audit of Bovine and Ovine Slaughter and By-Products Sector (Ruminant Products Audit)’, pp. 7–8 (IBDS tab 17)
233 T122 p. 154
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East. I have never seen a split head in an abattoir. The head is removed from the carcass by cutting through the last of the neck vertebrae. It is virtually spun off and carried away to a place of refrigeration prior to shipping out of the plant. Or if someone is going to bone the head to recover the cheek meat, it is normally refrigerated overnight in an offal chiller well away from the carcass meat. To split a head would take some saw, because the bone is over ½ inch thick covering the brain. To recover the brain is probably uneconomic even in normal circumstances. There were occasions when the British meat trade was asked to supply brains to certain European pâté manufacturers, but to do it effectively the equipment, which constituted a guillotine, cost £14,000. As the offered price was something less than 70 pence a kilo for brain meat, it was not a runner. I have seen one of these machines, but I do not believe there would be more than one in the UK.234

3.78 Mr Kevin Taylor, Assistant Chief Veterinary Officer, MAFF, suggested that the practice of head-splitting was limited before the emergence of BSE, citing the ‘sheer difficulty of splitting the bovine skull’.235 The evidence of Mr Colin Maclean of the MLC also suggested that removal of the brain from bovine heads was not common prior to the introduction of the SBO controls:

We did the survey, it was not that common, but it did happen occasionally and we did not like it presentationally.236

3.79 Mr Keith Baker, Assistant Chief Veterinary Officer, MAFF, told the Inquiry that he had not seen the practice of brain removal before the introduction of the SBO controls.237 The evidence of Mr Carrigan was similar:

I have never known anyone who contract slaughtered for anyone to give them other than an entire head. I have never known the practice of a brain being removed.238

3.80 Evidence before the Inquiry suggested that the practice of head-splitting for bovine brain removal largely developed in response to the SBO controls and was prompted, to a large extent, by economic considerations.239 It is noteworthy that the IEHO later referred to the practice as one ‘not considered at the time the Regulations were drawn up and implemented.’240 Responses to MAFF in the consultation period prior to the introduction of the SBO controls also suggested that, generally speaking, the removal of bovine brains was not common practice at the time.241

234 IBD1 tab 7 p. 116
235 T122 p. 154
236 T108 pp. 35–6
237 T107 pp. 114–16
238 T58 p. 41
239 T62 p. 19
240 YB89/19.25/1.1–1.76
241 YB89/9.25/1.1–1.76