Foot and Mouth Disease:

An evaluation of the current control policy from a historical perspective

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Introduction

History is commonly used as a resource by MAFF to justify the policy of FMD control by slaughter. The adherence to the same policy for 100 years and its supposed ongoing efficacy provide considerable authority for its continual application, despite the fact that at present, the disease situation is worsening daily.

If the time has arrived to examine whether slaughter should continue, then these historical certainties also require questioning. The past not only offers guidance where similar situations appear in the present, but also reveals profound differences which suggest that direct parallels cannot always be drawn between past and present.

Two years' research using original documents have contributed to the following comments:

1) Slaughter has never been the obvious response to FMD. Complex, ongoing negotiations were necessary in order to gain support for the introduction and maintenance of government control over FMD. The rationale behind this decision was largely tied to the economic, commercial and agricultural conditions of the 19th century. It cannot therefore be simply assumed that this past decision still holds, as at the very least its rationale must have changed to keep pace with the changing understanding of FMD and alterations in agriculture and world trade patterns.

2) The fact that slaughter has always eliminated FMD has contributed to the present authority of this policy. However, on several occasions stamping out has taken months if not years, with profound personal and economic costs which are not generally publicised. On such occasions, slaughter has generated controversy, and I explain who was responsible for these criticisms, and why. I also present the likelihood that many problems experienced in the past will resurface as major issues affecting the outcome of the current crisis. Past evidence reveals that the present outbreak was always likely to reach this scale. This data forms a strong argument for reconsidering the proposed intensification of slaughter.
3) The authority of slaughter is such that MAFF firmly believes that there is no other way to manage FMD, especially given the technical and administrative problems with vaccines. Here I examine why MAFF is mistaken in this certainty which is largely grounded in past successes, and explore deeper reasons why vaccination is not favoured.

1) Slaughter has never been the obvious response to FMD.¹

a) state control of FMD

- FMD first appeared in 1839 yet despite initial reaction was largely ignored for the next 30 years. The disease was common, extremely mild in relation to other prevalent diseases and provoked few efforts at control. FMD was an accepted and indeed expected occupational hazard.

- FMD control by the state occurred almost as an afterthought. Attention was primarily directed to preventing importation and spread of highly fatal livestock ailments such as cattle plague. FMD control by movement restrictions was merely tagged on to legislation aimed at controlling these much more serious diseases.

- Many veterinarians, farmers and MPs rejected the need to control FMD, upon the basis that firstly the disease was not severe enough and that losses due to legislative 'cure' would outweigh those inflicted by the disease itself. Secondly they doubted if control were possible, given their belief that FMD could spread through wildlife and human movements, which could not be controlled as easily as infected livestock.

- Influential breeders, often MPs and Royal Agricultural Society representatives, led the lobby for FMD elimination. They suffered the most marked economic losses due to the disease: valuable young livestock suffered higher than average mortality while infertility, occasional abortions and mastitis were also recognised to follow FMD infection.

- Quantification of FMD losses was an important resource in the drive for FMD elimination. Various farming witnesses to Parliamentary Commissions put forward their empirical estimates of financial losses caused by the disease. These were expressed in terms of extra feed consumed, reduction in milk production or extra time required to make market weight. In 1871 the disease was made notifiable, and by multiplying disease incidence by these estimates it became possible to express FMD losses on a national scale for the first time. These contributed to the desire to eliminate the disease because it seemed obvious that FMD affected the meat supply, and meat consumption by the working classes was believed necessary in order to increase their working efficiency. This stimulated urban, capitalist demands for FMD control.

¹ The majority of this section is drawn from my MSc thesis: A Woods,' From occupational hazard to animal plague: Foot-and-mouth disease in Britain, 1839-1884' Manchester University, 1999.
Successful efforts to intensify FMD controls failed to reduce disease spread. This meant that many farmers experienced movement and marketing restrictions which in their minds became inseparably linked to FMD occurrence. The social and economic effects of such measures meant that farmers began to dread FMD and demand its elimination. By the 1880s therefore, the battle over whether FMD should be subject to state-led control was won and the framework for today's FMD controls were in place. Imports of livestock from FMD infected countries were prohibited (most European nations sending livestock to Britain had FMD), disease spread was halted by isolation of infected and contact animals, markets were cancelled and movement restrictions imposed within large infected areas. Whether these measures worked or the disease disappeared for other reasons is difficult to assess, but Britain was remarkably free of FMD from 1884-1900.

To conclude:

Therefore the original desire to eliminate FMD was facilitated by the following factors:

- State controls of other contagious diseases were necessary and therefore the framework for FMD regulation existed.
- Breeders perceiving FMD as a disease inflicting severe economic losses upon their valuable stock possessed the political power to impress these notions upon others.
- The capitalist fear that reduction in the meat supply by FMD would spark civil unrest and reduce workers' productivity levels
- Most other farmers eventually reconstructed FMD as a severe disease despite the mild nature of its symptoms, because of the implications of measures undertaken by the state for its control.

It is obvious therefore that the decision to control FMD occurred within a society very different to the present, especially in terms of where the political power lay and in the beliefs about the value of meat consumption.

b) State slaughter for FMD

- Official histories state that slaughter was first introduced in 1884. This requires qualification; while an act was passed in 1884 enabling local authorities to apply slaughter if they wished, this was only implemented once in the next 20 years.

- Slaughter was actually introduced 'by the back door' at a time when disease incidence was low, upon the basis that this would most rapidly eliminate disease before it had chance to spread. The imposition of British import controls in the 1880s encouraged many other FMD free nations such as the US and Australia to follow suit. This affected the British export trade, which almost solely consisted of British pedigree cattle owned by the same set of influential breeders. This small trade was nonetheless extremely valuable and therefore the need to keep the
country clear of FMD was repeatedly asserted by breeders. However, when disease struck these pedigree herds were exempted of slaughter. The Ministry stated that they were too valuable to the nation to merit destruction though an additional motive was the huge compensation costs demanded by slaughter.²

- The Ministry persuaded the majority of farmers who were not involved in the export trade that slaughter was vital by portraying FMD as a disease which would inflict severe economic losses were it allowed to run. This fact was subject to repetition throughout the 20th century as FMD continued to appear.³ The 19th century estimates of losses inflicted by FMD were used as evidence, as were high loss estimates from the continent, where FMD was endemic. These figures were contrasted to low average annual costs to MAFF of disease elimination by slaughter.⁴ However, such statistics are extremely questionable. The method of loss estimation on the continent was never described. In addition, costs cited by MAFF did not express the often-substantial, consequential losses inflicted by FMD upon farmers and meat traders. The 19thC estimates were themselves extremely empirical and no controlled experiments have since been undertaken to properly quantify the reduction in productivity of an FMD recovered animal.

- The original rationale for discriminate slaughter during the period 1900-1920 was supposedly to rapidly eliminate new invasions of FMD, and this was largely successful; outbreaks were contained quickly and costs kept low.⁵ However, in 1922 (as in the present case), disease spread through an infected market yet notification was delayed, by which time FMD was already widespread. This was an entirely new context for the application of slaughter and certainly not one which the original framers of the slaughter policy had foreseen or intended.

To conclude:

This evidence undermines the authority of the state policy for control of FMD by slaughter. This was not the 'obvious' response to this disease. Slaughter of FMD was introduced almost by default in order to rapidly eliminate new outbreaks, and again by default was extended to the control of already-raging epidemics. Pressure for the continuation of this policy was not driven by far-sighted, intelligent men but by an influential group who manipulated their political power in order to preserve their personal economic interests.

It is important to realise that animal welfare arguments were never part of the discussions upon FMD control. The present argument that slaughter is justified upon welfare grounds is merely a device intended to make slaughter a 'politically acceptable' move. Emphasising its economic basis would simply have fuelled pre-existing criticisms against the validity of intensive farming systems. This welfare argument is now exposed as a fallacy, given the proposed slaughter of many healthy

² CVO evidence to the 1922 Pretyman Committee, see Public Records Office files MAF 35/159
³ See Times references to FMD, 1920-1970 (sourced using Palmer's Index to the Times)
⁴ An example may be found in PRO file MAF 35/167, Precis of CVO’s evidence, Departmental Committee 1924. SS Memo B, 'slaughter versus Isolation, a Comparison.'
⁵ see Board of Agriculture, Annual Reports under the Diseases of Animals Acts, 1900, 1908, 1911-1921
sheep, some of which have supposedly suffered the disease without drawing notice to themselves.

However, arguments about the effect of FMD upon the export trade have become more cogent over time, as since WWII, and especially under recent trade developments in the EU and WTO, exports of British meat and livestock products have dramatically increased. As such, the majority of the farming community now possesses the same interests originally held by the few pedigree livestock breeders. Meanwhile, trade barriers erected against nations infected by FMD have intensified. Therefore despite the still highly questionable long-term economic effects of allowing FMD to become endemic, this is simply not an option and in terms of international trade, the need to eliminate FMD is greater than ever before.

If FMD elimination is required on economic grounds, then the veracity of the current approach is based upon the fact that elimination of disease by slaughter costs less than the long-term loss of the export market. If this ceases to be the case, then the policy should be reviewed and alternatives explored. It may be, for example, that the huge costs involved in the intensified cull outweigh the costs of the longer export ban which would result from vaccination.

2) The past 'success' of slaughter requires qualification

- FMD outbreaks occurred repeatedly throughout the 20th century, with rarely a disease free year until 1969. In many years there were very few outbreaks and slaughter effectively and rapidly eliminated disease.  

- On other occasions however, control was not so efficient and while FMD was eventually stamped out, many animals lost their lives and the costs were huge, both in terms of MAFF compensation, farmers' consequential losses and the overall psychological impact of slaughter. History reveals that opposition to the slaughter policy was most marked in these years. The 1922-24, outbreak effectively lasted 2 years, despite a few weeks of disease freedom in 1923. In 1951-52 disease elimination took almost a year, and the 1967-68 outbreak lasted 8 months. While slaughter can be said to have 'worked,' the Ministry generally overlooks the events of these years and dismisses the criticisms that emerged as unfounded and ignorant. In 1924, a severe revolt by Cheshire farmers meant that MAFF was forced to allow the isolation of several herds rather than slaughter. In 1968, MAFF was on the verge of vaccination given the rapid spread of disease. Only the down-turn in notifications prevented this strategy going ahead. Slaughter has therefore not always been as successful as MAFF claims.

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6 Anon, 'Foot and Mouth disease' in Animal Health, a centenary, 1865-1965' (London, 1965)
7 ibid, p279
8 information drawn from the 'Cheshire Observer' and 'Crewe Chronicle' newspapers, 12/23-2/24, located in Cheshire Public Records Office
9 personal communication, GRE Evans BVSc MRCVS.
The argument that slaughter is a totally inappropriate means of controlling FMD has always been an extreme minority position. Certainly in the present for the economic reasons stated above, few would dispute the fact that slaughter is a vital first line of defence against FMD.

A more valid criticism is that slaughter, whilst in theory effective and the best means of controlling disease, is inappropriate to the control of widespread FMD. This point deserves consideration in the present situation. Arguments which have historic roots yet are applicable to the present include:

1) Ever since the introduction of this policy, MAFF has recognised that the rapid notification of disease is vital for its success. But this requires farmers to have a high index of suspicion that symptoms observed in their stock may be FMD. This is always a problem when FMD is absent for long periods and is compounded by the fact that symptoms are not always obvious. This fact has frequently stimulated intense efforts by the NFU and MAFF to ‘educate’ farmers of FMD symptoms.

2) Historically, the failure to rapidly detect FMD has led to diseased animals inadvertently infecting markets and transit vehicles, resulting in a sudden 'explosion' of FMD throughout the nation, presenting extreme tracing difficulties. The frequent movement of livestock through markets by dealers was recognised in 1922 as compounding this problem.  

3) The logistical problems presented by rapid spread of disease are well recognised from experiences in Cheshire in 1924 and 1967. Problems of manpower and supplies can prevent the rapid follow-up, diagnosis, slaughter and destruction of infected animals. These problems have been commonly cited by critics as permitting the ongoing spread of FMD and have also been recognised by government inquiries into FMD outbreaks. Animals are at their most infective while incubating disease, therefore if symptoms are present in only a few animals, their contacts are likely to manufacturing large quantities of virus and if not slaughtered immediately pose a dangerous risk. Even once slaughtered, virus can survive in parts of the carcass, in buildings and be carried by wildlife. If disinfection and carcass disposal is not rapid and efficient, this poses additional routes for disease spread. When resources are extremely stretched, the Ministry has extreme difficulty overtaking and halting the spread of disease.  

4) When large-scale slaughter has occurred and yet disease is still spreading, opposition has frequently been directed to the sheer scale of the destruction. The Ministry tends to counteract this by stating that the percentage of livestock killed in national terms is extremely low. This is an attempt to disguise the fact that in certain regions, percentages are huge - 33% of Cheshire cattle in 1923-24 and 1967-68. In these cases, farmers argued that disease controls had failed, and that elimination only occurred because there were no longer any livestock left to

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10 FMD: Report of Pretyman Committee, Parliamentary Papers 1923, cmd 1794
12 Evidence from Cheshire local newspapers cited above
infect.14 In addition, the psychological effects of large-scale slaughter become widespread and while not quantifiable are extremely pervasive.15 Critics also assert the immorality of slaughtering huge numbers of animals (especially breeding stock not destined for the butcher in the near future) when alternative disease controls are available (see below.)

5) The cost of compensating for large-scale slaughter is huge. The Ministry has in the past attempted to overcome these criticisms by expressing compensation in terms of annual averages over a number of years. It also repeatedly states that the cost of slaughter is worthwhile given the economic losses inflicted by the stoppage of British exports.16 A cost-benefit study undertaken as part of the enquiry into the 1967-68 epidemic is repeatedly cited as stating that slaughter was the cheapest and preferred method of disease control.17 In fact the authors of this admitted to a number of major methodological problems encountered with this technique18 including the difficulty of quantifying factors such as the uncertainty and stress which the slaughter policy imposed upon farmers.19

- Historically, the NFU executive has always supported MAFF in the decision to slaughter. However, at grass roots levels there has been considerable dissent, but regional opinions are often discarded by HQ.20 The NFU supposedly represents many different branches of farming throughout the nation. Yet regional variations in farming practices and the fact that all branches of farming do not share the same interests means that the task of representing farmers as a whole is extremely difficult. Since the 1920s, the NFU has been recognised by MAFF as the foremost farming representative body and has been involved in many complex negotiations in order to gain overall state benefits for the industry.21 Small wonder therefore that the NFU does not wish to divorce itself from its benefactors in response to criticism arising from a proportion of farmers.

- The British Veterinary Association has always shown similar alliances, despite grass roots objections to slaughtering. Again however, one must bear its additional interests in mind. The veterinary profession has gained considerably in status over the years, not least as a result of state recognition as experts in the fields of

14 Evidence from Cheshire local newspapers cited above
15 On both these cited occasions, the depressing effects of fires and smoke were cited as severely affecting morale. (CVO evidence to the 1924 Pretyman Committee, H Hughes and J Jones, Plague on the Cheshire Plain (1969). In 1923 Cheshire it was also widely believed (as has been cited in the present outbreak) that smoke from fires carried the virus. See letter from JEM Sloane on cremation, Crewe Chronicle 22/12/23 p7
16 An example may be found in the Public Records Office, file MAF 35/167, Precis of CVO's Evidence, FMD Departmental Committee, 1924
17 AP Power and S Harris, 'A Cost-Benefit Evaluation of Alternative Control Policies for Foot-and-Mouth Disease in Great Britain.' J Agri Econ 24 (1973), 573-600
18 ibid, p574
19 ibid, p594
20 Evidence for this may be found in the NFU minutes from meetings of the Meat and Livestock Committee, held at Reading Rural History Unit
research and public health. MAFF has been used as a vehicle in the past to expand the veterinary role and reward systems.\textsuperscript{22}

- Members of the medical profession have historically been involved in major criticisms of the slaughter policy.\textsuperscript{23} For obvious reasons, doctors tend to rely on therapy and vaccination for disease control and this reliance on scientific, laboratory-formulated measures has shaped criticisms of a supposedly backward and barbaric slaughter policy. However, medical criticisms have been repeatedly rejected by farmers and vets upon the basis that doctors are only experts in the field of human disease and have no role to play in the management of livestock problems. It is important not to overlook the fact that certainly prior to WWII, medics and vets were competing for 'territory' in terms of which profession should be responsible for meat/milk inspection and for research into animal diseases.\textsuperscript{24}

To conclude:

- The above reveals that the present situation is not entirely new, though unprecedented in the scale of slaughter proposed. The history of past outbreaks reveals that initial delay in notification and infection of several markets by dealers have been vital factors permitting FMD to evade control by slaughter and leading to extremely widespread disease. This perhaps points to the fact that the present scale of this outbreak could have been predicted as these facts came to light.

- It also reveals that while criticisms against the principle of slaughter as an initial means of disease control have little justification, there are many objections, voiced historically but nonetheless relevant today, to the continuation of large-scale slaughter once the disease is widespread. Not least of these is the logistical problem of efficiently implementing the slaughter policy upon a large scale. Farms affected now by FMD are far larger than in 1967 therefore the system of slaughter and disposal will be more rapidly overwhelmed and the problems associated are therefore more pressing.

- Opposition to slaughter tends to be written out of history, precisely because the individuals concerned are not always the most prominent or influential. However I can guarantee that in situations such as the present, when FMD is widespread and slaughter of questionable efficacy, there has always been considerable opposition to its continuation. It is important to recognise that external interests will always influence the positions individuals adopt upon the slaughter policy. Farmers may wish to keep their animals, but is this any worse a motive that the desire for personal economic or professional gain?

\textsuperscript{22} this conclusion is drawn from extensive reading of the \textit{Veterinary Record} from the 1920s onwards, and from several Parliamentary Committees appointed in the first half of the 20\textsuperscript{th} century to consider the present and future veterinary requirements.

\textsuperscript{23} one of the most prominent critics in the 1920s was Walter Morley Fletcher, the first Secretary of the Medical Research Council. See PRO file FD 1/1346

\textsuperscript{24} \textit{Veterinary Record} evidence.
3) Why the historical authority of slaughter and rejection of vaccination are inappropriate responses

Authority of slaughter

- Britain has always been intensely proud of her ability to abolish disease. Our island status has meant that several diseases, once eliminated by stamping out have been permanently kept out of the country eg cattle plague, sheep pox, rabies. This geographical 'difference' has been continually emphasised as reason why disease elimination is achievable in Britain but rather more difficult elsewhere, and has been used by MAFF to justify the rejection of preferred continental means of disease control in favour of a stamping out policy. However, this 'island' status has been increasingly undermined by the expansion of free European and world trade and widespread tourism. This encourages the introduction of 'foreign' substances into Britain. Powers to restrict such moves are extremely limited and inspection as a means of control can never approach 100% efficacy. The confidence in British isolation and its implications for disease control measures is therefore less justified than in the past.

- In addition the conditions within the nation have undergone profound changes. Farm size and livestock holdings have vastly increased throughout the 20thC whilst the number involved in agriculture has plummeted. Agri-business has forced smaller producers out of the market while economies of scale and meat marketing practices have encouraged the nationwide movement of livestock. Indeed, a critic of slaughter in the 1950s uses the very same reasoning to support a call for alternative disease control measures. While cattle passports, the smaller number of individuals involved and IT advances should assist livestock tracing these are counterbalanced by the sheer numbers of stock involved.

- Not only has the entire context for FMD control changed, but the disease itself has been 'reinterpreted' in the light of novel epidemiological findings. In the 19thC, inconvenient FMD controls were eventually accepted due to the widespread belief that simple prohibition of diseased imports would keep the disease out of Britain. Yet the disease still appeared - foreign hay and straw was banned in 1908 after an outbreak was linked to this source. The 1920s saw prohibition of continental meat imports and the imposition of stringent controls on the Argentine as meat was recognised as a vehicle of the virus. Swill boiling regulations were introduced at this time. At the same time, human movement in 1922-24 was linked to disease spread between farms and research in the 1920s and 30s investigated the potential role of wildlife, including birds, in epidemiological spread of disease. Yet still, FMD kept appearing and spreading despite all these additional precautions, highlighting its extreme contagiousness and virtual impossibility in...
sealing off all routes of disease spread. The recognition in 1968 that air currents could carry the virus is the ultimate example of how resistant this virus is to man-made restrictions. If these complexities had been realised at first, it is doubtful that legislative efforts and slaughter would ever have been thought appropriate to FMD management.

- However, it is confidence borne out of past successes against FMD which is spurring MAF to persist in slaughter and to repeatedly reject alternative measures. This confidence is misplaced; FMD has indeed been eliminated in the past but the world has changed and the past is no guarantee of future success. Despite many additional disease controls, no amount of regulation can control air or wildlife spread of FMD and disinfection of people and vehicles is primitive and largely useless.\textsuperscript{30} The changing conditions of agricultural and international trade during the last fifty years can only assist this virus in its spread around the globe.

Rejection of Vaccines

- The notion that Britain could eliminate FMD by slaughter meant that while publicly, MAFF expressed hopes that a vaccine would emerge from Pirbright (the FMD research lab set up in 1924) in private the CVO stated that vaccines would find no application on British soil. However, he considered that any scientific advances in disease control could be useful in areas where the disease was endemic, such as South America and Europe, since this would reduce the possibility of disease importation into Britain from these regions.\textsuperscript{31}

- The fact that FMD is such a contagious virus justified the restriction of research, at least on large animals, to workers employed at Pirbright under the FMD Research Committee, over which MAFF had a huge degree of influence. This made it impossible for independent researchers to investigate the disease and formulate alternative measures for its control.\textsuperscript{32}

- The Ministry's stance meant that there was no sense of urgency in the British hunt for a vaccine, and most initial progress took place on the continent, when since the 1920s, serum was used for treatment and prevention of disease.\textsuperscript{33} Only when war contingency planning was undertaken in Britain in 1937 did the need to develop a vaccine become more pressing. This was partly because of the perceived threat of FMD use as a biological weapon and also because under wartime meat shortages, slaughter may become impossible.\textsuperscript{34}

\textsuperscript{30} concluded by the 1969 Northumberland committee and reported in the recent press, week of 12/3/01
\textsuperscript{31} CVO letter to W Leishman, (Major General, Army Medical Services) 7/1/24, arguing against Leishman's recommendation for immediate institution of research into FMD in Britain. PRO file MAF 35/217
\textsuperscript{32} The FMD Research Committee minutes, 1924-39 reveal the repeated rejection of external requests to investigate FMD
\textsuperscript{33} Skinner, FMD Research Committee, Committee Paper 411 (1939), FMDRC 'Passive immunisation against FMD with special reference to the use of convalescent blood, a review.'
\textsuperscript{34} PRO file MAF 35/231 FMD (Bacteriological Warfare) and MAF 250/126 FMD: preparation of serum for treatment of animals.
• In the early 1950s, vaccines were used in Europe (with varying success) to counteract a severe outbreak of FMD. When the disease reached Britain in 1951, there was a clamour for vaccine use. All work hitherto was kept secret since the Ministry feared such pressure. In 1951 however, MAFF was forced to account for how it had spent 30 years of research and hundreds of thousands of pounds if it was not to assist British farmers against FMD. MAFF stated that while vaccines were under development, their use in Britain was inappropriate since many technical problems had yet to be solved. Vaccines were only used on the continent due to the 'inferior' disease status there, which meant that slaughter was not financially feasible. Technical problems were less of an issue on the continent, as vaccines there were used to reduce disease spread, without the overall aim of elimination as was the situation in Britain.

• For the past 50 years, these same arguments have been used against vaccination: the problem of strain diversity, the huge costs of repeatedly vaccinating animals against the disease and the fact that inactivated virus used in the vaccine may retain an element of infectivity and induce 'masked' disease or a carrier state. In addition, the 'stigmatisation' of vaccine use remains - only nations which are unable to control the disease resort to vaccination. The barriers erected against goods from vaccinating nations merely re-inforce this stigma, which originated on British soil.

• While many advances have been made in vaccination, it is clear that to MAFF, these advances will never be sufficient. The Ministry keeps moving the goal posts, such that nothing short of no-risk, 100% protection will be regarded as sufficient. This could hardly be claimed of any vaccine in existence. While good progress has been made in tests to differentiate infected and vaccinated animals - tests that have important implications for the export trade and considerably strengthen the case for vaccination - MAFF rejects these as insufficiently advanced for field application. This latter argument is again a long standing one. No aspect of vaccine technology has, in MAFF's view, ever been sufficiently advanced for use in the field. There a huge irony in this situation - that despite a culture of scientific discovery that involves the transfer of discoveries out of laboratory into the field, MAFF seems intent on keeping FMD vaccines within the lab and locking the door.

• Other nations, currently disease free, are far more open to vaccination. Australian experts state that 'recent developments suggest that vaccination could become a more attractive option.' Not all European nations were happy at the decision to stop vaccinating against FMD in the EU in 1991, in order to streamline disease

35 Some information on this is revealed in PRO file MAF 35/868, European Commission for the control of FMD
36 See the collection of press and journal cuttings made by H Skinner during the 1950 outbreak, held in the Pirbright laboratory archives
control policies and lift trade barriers, as recent comments in the press suggest. The EU strategy for emergency FMD vaccination suggests a number of criteria which should affect the decision to vaccinate; the British situation already fulfils many of these such as rapid rise in outbreaks and widespread disease distribution. The suggested rationale for using vaccination - to prevent FMD spread - is clearly present in this case.

- Several of the scientific arguments against vaccination are irrelevant to Britain's current position. An example is the matter of strains, since only one strain is involved in this case, for which sufficient stocks of vaccine exist. The matter of repeatedly vaccinating animals is also inappropriate in this case, since vaccines would only be required in the short term to control disease rather than to prevent its re-importation. In addition, the argument that there is insufficient manpower to vaccinate livestock is surely irrelevant since farmers are quite capable of vaccinating their own stock without veterinary assistance. MAFF would probably argue against this in the name of absolute vaccine security but argument has no real weight, it simply reflects the overall desire not to vaccinate.

To conclude:

- It is clear that in MAFF's opinion, ongoing technological progress in vaccine development will never be sufficient to justify use in the field - this is obvious from the fact that its arguments against vaccination have changed little since 1950 despite tremendous scientific advance. In fact, MAFF has set completely unobtainable scientific criteria that supposedly justify its rejection of vaccination but actually just support its pre-existing decision not to vaccinate. The various logistical problems associated with vaccination could be overcome if MAFF had the will. Instead they are highlighted as reasons why vaccination could never work.

- The true reasons for not vaccinating are grounded in misplaced confidence that because slaughter has always worked in Britain, it will work again if applied with sufficient vigour. This ignores the huge national and international changes in the last 50 years which assist the spread of FMD, and the additional epidemiological knowledge which confirms FMD as the most contagious disease known to man.

- In addition there is the matter of national pride. Evidence from other nations shows far less ambivalence to vaccination; was MAFF to choose to vaccinate at this point this decision would be entirely justified in terms of EU policy. But MAFF feels that Britain is superior to vaccination, that only 'weak' or 'inferior' nations, unable to control disease properly, need resort to such technology. Ironically, scientific advance is presented as a backward step while application of 19thC slaughter and burning is 'progress.' Britain spent the majority of the 20thC boasting about its superior sanitary status and disease 'purity', achievable through stamping out. In the case of FMD, Britain encouraged the rest of the world to

39 Comments by Belgian and French farmers, reported in the broadsheets, Feb-March 2001
follow its example. There are still the shreds of this national reputation at stake here, despite BSE and swine fever. MAF probably feels that vaccinating would seal international opinion that Britain is 'the leper of Europe.'

- Since opposition to slaughter has historically always gathered pace over time as the policy has failed, MAFF probably feels that an intensive strike would wipe out the disease quickly and with it the public objections and ultimately public memories of the carnage. Turning to vaccination at this point when the decision could so easily have been made earlier without such extensive slaughter would seriously undermine MAFF's reputation and legitimacy. Also, in a sense, this would betray all those past CVOs who put their careers on the line to withstand farmers complaints and assert that slaughter was the best and the only way to control FMD. The fact that slaughter of up to a million animals is supposedly justified in order to save a single government department's credibility can surely not be tolerated.

**Summary of overall findings**

- Slaughter as a first line of defence against FMD invasion was introduced in an entirely different context to the present, on purely economic grounds. Those grounds are more justified today than in the past due to present agricultural practices and the globalisation of trade. However, the very fact that these conditions are open to change over time means one must guard against granting the slaughter policy a permanent status. Whilst the economic situation may justify slaughter, if that situation changes, the veracity of the policy is thrown into question. There is therefore a strong case for examining whether costs involved in the proposed mass cull (in addition to the consequential losses to farming and the tourist industry) may outweigh the costs to the export industry imposed by alternative methods of disease control.

- Slaughter has always eliminated FMD but on certain occasions, as at present, confidence in the policy has been severely shaken. History reveals that conditions associated with the present outbreak made the current state of affairs virtually inevitable. Criticisms of the slaughter policy made during extensive past outbreaks are still relevant today. Leaving aside the question of whether or not slaughter is at this point economically or morally justified, the feasibility of its practical implementation must throw a huge question mark over whether such a course should be attempted. It is important to realise that those opposing slaughter are not self-interested cranks any more than those supporting the policy, despite the fact that historically they have been portrayed as such. Additional motives and interests shape everyone's opinion on slaughter and should be taken into consideration when deciding upon its continuation.

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41 see various PRO MAF files discussing the formation and actions of the European Commission on FMD
• While vaccination does present technical and administrative difficulties, these could be effectively tackled were the Ministry to desire it. Instead, technical and practical problems are presented as almost insurmountable. It is important to realise that MAFF has never wanted to vaccinate and that the problems it cites merely justify an existing stance rather than providing its basic rationale. No vaccine will ever achieve the standards MAFF desires, and the reasons for this lie in the arena of national pride, historic tradition and government credibility to the public. MAFF hides deeper anti-vaccination sentiments behind scientific reasoning, and this deserves to be recognised. If the economic reasons for slaughter or its practical feasibility are thrown into question then vaccination is the only real alternative. The grounds cited by MAFF are insufficient for the rejection of vaccination and exposing the real reasoning behind this decision is necessary in order for any substantial challenge to be mounted against this decision.

• MAFF has grown powerful through the past elimination of FMD and through repeated victories against the critics of slaughter. Tradition plays a huge role in its approach to this disease problem and in the current critical situation, historical success is possibly the only certainty MAFF has left to cling on to. Here I have undermined that certainty and with it, many of the reasons for continuation of the slaughter policy.