UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND

Confidence Building Measure Return for 2008
(covering data for 2007)
for the
Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and their Destruction, 10 April 1972

Submitted to the United Nations
on 15 April 2008

DECLARATION FORM ON NOTHING TO DECLARE OR NOTHING NEW TO DECLARE FOR USE IN THE INFORMATION EXCHANGE

Measure	Nothing to declare	Nothing new to declare
A, part I		
A, part 2 (i)		
A, part 2 (ii)		
A, part 2 (iii)		
B (i)		
B (ii)		
C		√
D		
E		
F		√
G		

(Please mark the appropriate box(es) for each measure, with a tick.)

Date: 15 April 2008

State Party to the Convention: UNITED KINGDOM

Form A Part 1

Exchange of data on research centres and laboratories[1]

1.	**Names(s) of facility[2]**	Defence Science and Technology Laboratory (Dstl), Porton Down. *Declared in accordance with Form A Part 2(iii)*
2.	**Responsible public or private organisation or company**	Ministry of Defence
3.	**Location and postal address**	Dstl Porton Down Salisbury Wiltshire SP4 0JQ

4. **Source(s) of financing of the reported activity, including indication if the activity is wholly or partly financed by the Ministry of Defence**

   Largely financed by the MOD.

5. **Number of maximum containment units[3] within the research centre and/or laboratory, with an indication of their respective size (m^2)**

   2 BL4 labs, 246m^2 total

6. **If no maximum containment unit, indicate highest level of protection**

7. **Scope and general description of activities, including type(s) of micro-organisms and/or toxins as appropriate**

   Research and development into protective measures as defence against the hostile use of micro-organisms and toxins.

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[1] The containment units which are fixed patient treatment modules, integrated with laboratories, should be identified separately

[2] For facilities with maximum containment units participating in the national biological defence research and development program, please fill in name of facility and mark "Declared in accordance with Form A, Part 2(iii)".

[3] In accordance with the 1963 WHO Laboratory Biosafety Manual, or equivalent

Form A Part 1

Exchange of data on research centres and laboratories[1]

1.	**Name(s) of facility[2]**	Health Protection Agency, Colindale
2.	**Responsible public or private organization or company**	Health Protection Agency (a non-departmental public body of the UK Department of Health)
3.	**Location and postal address**	61 Colindale Avenue London NW9 5EQ England

4. Source(s) of financing of the reported activity, including indication if the activity is wholly or partly financed by the Ministry of Defence

The Department of Health funds this activity as part of its finance of the Health Protection Agency's Centre for Infections at Colindale, London NW9

5. Number of maximum containment units[3] within the research centre and/or laboratory, with an indication of their respective size (m^2)

1 high containment unit: 30m^2

6. If no maximum containment unit, indicate highest level of protection

Not Applicable

7. Scope and general description of activities, including type(s) of micro-organisms and/or toxins as appropriate

Laboratory is used to provide diagnostic services for Herpes B; viral haemorrhagic fever infections: Lassa fever, Ebola, Marburg, Congo-Crimean haemorrhagic fever; avian influenza and SARS. To support diagnostic services a programme of applied diagnostic research and development is conducted.

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[1] The containment units which are fixed patient treatment modules, integrated with laboratories, should be identified separately

[2] For facilities with maximum containment units participating in the national biological defence research and development program, please fill in name of facility and mark "Declared in accordance with Form A, Part 2(iii)".

[3] In accordance with the 1963 WHO Laboratory Biosafety Manual, or equivalent

Form A Part 1

Exchange of data on research centres and laboratories[1]

1.	**Name(s) of facility**[2]	Health Protection Agency, Centre for Emergency Preparedness and Response, Porton Down
2.	**Responsible public or private organization or company**	Health Protection Agency (a non-Department public body of the UK Department of Health)
3.	**Location and postal address**	Porton Down Salisbury Wiltshire SP4 0JG England

4. Source(s) of financing of the reported activity, including indication if the activity is wholly or partly financed by the Ministry of Defence

The Department of Health funds this activity as part of its finance of the Health Protection Agency's Centre for Emergency Preparedness and Response at Porton Down.

5. Number of maximum containment units[3] **within the research centre and/or laboratory, with an indication of their respective size (m^2)**

2 units: 59m^2; 46m^2

6. If no maximum containment unit, indicate highest level of protection

Not Applicable- the site has CL4 laboratories as in Q5

7. Scope and general description of activities, including type(s) of micro-organisms and/or toxins as appropriate

Diagnosis and research into various containment level 4 viruses including Lassa, Ebola, Marburg and other haemorrhagic fever viruses.

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[1] The containment units which are fixed patient treatment modules, integrated with laboratories, should be identified separately

[2] For facilities with maximum containment units participating in the national biological defence research and development program, please fill in name of facility and mark "Declared in accordance with Form A, Part 2(iii)".

[3] In accordance with the 1963 WHO Laboratory Biosafety Manual, or equivalent

Form A Part 1

Exchange of data on research centres and laboratories[1]

1.	**Name(s) of facility[2]**	National Institute for Biological Standards and Control
2.	**Responsible public or private organisation or company**	Non-departmental public body of the UK Department of Health
3.	**Location and postal address**	Blanche Lane South Mimms Potters Bar Herts EN6 3QG

4. Source(s) of financing of the reported activity, including indication if the activity is wholly or partly financed by the Ministry of Defence

UK Government (Department of Health and the Home Office)

5. Number of maximum containment units[3] within the research centre and/or laboratory, with an indication of their respective size (m^2)

Two containment level 4 units, each of 59 sqM

6. If no maximum containment unit, indicate highest level of protection

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7. Scope and general description of activities, including type(s) of micro-organisms and/or toxins as appropriate

Highly pathogenic influenza virus – reagent development
Smallpox vaccine – developing and testing reagents
Bacillus anthracis – vaccine testing, reagent development, development of in vitro assays to detect anthrax toxin neutralising antibodies
Yersinia Pestis – molecular structural work
Botulinum toxins (serotypes A-G)- control, standardisation and assay development for vaccines and anti-toxins

In general, the activities are related to development of assays and testing of reagents

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[1] The containment units which are fixed patient treatment modules, integrated with laboratories, should be identified separately

[2] For facilities with maximum containment units participating in the national biological defence research and development program, please fill in name of facility and mark "Declared in accordance with Form A, Part 2(iii)".

[3] In accordance with the 1963 WHO Laboratory Biosafety Manual, or equivalent

Form A Part 1

Exchange of data on research centres and laboratories[1]

1.	**Name(s) of facility[2]**	NIMR Containment 4 Building C
2.	**Responsible public or private organisation or company**	National Institute for Medical Research
3.	**Location and postal address**	The Ridgeway Mill Hill London NW7 1AA England

4. Source(s) of financing of the reported activity, including indication if the activity is wholly or partly financed by the Ministry of Defence

Medical Research Council

5. Number of maximum containment units[3] within the research centre and/or laboratory, with an indication of their respective size (m^2)

1 BL4 containment unit of 298 m^2

6. If no maximum containment unit, indicate highest level of protection

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7. Scope and general description of activities, including type(s) of micro-organisms and/or toxins as appropriate

Research and diagnostics on highly pathogenic avian influenza virus

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[1] The containment units which are fixed patient treatment modules, integrated with laboratories, should be identified separately

[2] For facilities with maximum containment units participating in the national biological defence research and development program, please fill in name of facility and mark "Declared in accordance with Form A, Part 2(iii)".

[3] In accordance with the 1963 WHO Laboratory Biosafety Manual, or equivalent

Form A Part 1

Exchange of data on research centres and laboratories[1]

1.	**Name(s) of facility[2]**	Institute for Animal Health, Pirbright Laboratory
2.	**Responsible public or private Organisation or company**	Biotechnology and Biological Sciences Research Council (BBSRC)
3.	**Location and postal address**	Institute for Animal Health Pirbright Woking Surrey, GU24 0NF England

4. Source(s) of financing of the reported activity, including indication if the activity is wholly or partly financed by the Ministry of Defence

BBSRC, EU, Department for Environment, Food and Rural Affairs (Defra). (Not funded by the Ministry of Defence).

5. Number of maximum containment units[3] within the research centre and/or laboratory, with an indication of their respective size (m^2)

No ACDP* Level 4* containment
No ACDP Level 3 containment
2,585 m^2 of SAPO** Level 4 ACDP2 laboratory space
3,232 m^2 of SAPO4 ACDP2 animal accommodation

** Advisory Committee on Dangerous Pathogens*
*** Specified Animal Pathogens Order*

6. If no maximum containment unit, indicate highest level of protection

SAPO4 ACDP2 containment

7. Scope and general description of activities, including type(s) of micro-organisms and/or toxins as appropriate

Work on exotic animal virus disease: Foot and mouth disease, bluetongue, swine vesicular disease, Africa Horse Sickness, Capripox, African Swine Fever, PPR and rinderpest.

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[1] The containment units which are fixed patient treatment modules, integrated with laboratories, should be identified separately

[2] For facilities with maximum containment units participating in the national biological defence research and development program, please fill in name of facility and mark "Declared in accordance with Form A, Part 2(iii)".

[3] In accordance with the 1963 WHO Laboratory Biosafety Manual, or equivalent

Form A Part 1

Exchange of data on research centres and laboratories[1]

1.	**Name(s) of facility[2]**	Veterinary Laboratories Agency
2.	**Responsible public or private organisation or company**	Department for Environment, Food and Rural Affairs (Defra)
3.	**Location and postal address**	Woodham Lane Addlestone Surrey, KT15 3NB England

4. Source(s) of financing of the reported activity, including indication if the activity is wholly or partly financed by the Ministry of Defence

Most funding is through Defra. None is funded by the Ministry of Defence.

5. Number of maximum containment units[3] within the research centre and/or laboratory, with an indication of their respective size (m^2)

SAPO* Level 4 (Defra)
3 x Avian Flu laboratories 1 = each 50 sq m
1 x Classical swine fever laboratory = 15 sq m
1 x Newcastle diseases virus laboratory = 50 sq m
1 x Rabies virus laboratory = 45 sq m
1 suite of Serology laboratories capable of increasing to SAPO level 4 but which usually run at ACDP level 2 = approximately 100 sq m

* Specified Animal Pathogens Order

6. If no maximum containment unit, indicate highest level of protection

[29 CL3 laboratories totalling 2,129 sq m.]
ACDP** level 3. These laboratories cannot be operated at the higher level of containment.

** Advisory Committee on Dangerous Pathogens)

7. Scope and general description of activities, including type(s) of micro-organisms and/or toxins as appropriate

Diagnosis and applied research on the epidemiology and pathology of the disease of farmed, domesticated livestock (cattle, sheep, pigs and poultry) and wild animal reservoirs. Bacteria and viruses in ACDP hazard groups 1-4, GM class 1-4 and SAPO groups 1-4.

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[1] The containment units which are fixed patient treatment modules, integrated with laboratories, should be identified separately

[2] For facilities with maximum containment units participating in the national biological defence research and development program, please fill in name of facility and mark "Declared in accordance with Form A, Part 2(iii)".

[3] In accordance with the 1963 WHO Laboratory Biosafety Manual, or equivalent

Form A Part 1

Exchange of data on research centres and laboratories[1]

1.	**Name(s) of facility[2]**	Merial Animal Health, Pirbright Laboratory
2.	**Responsible public or private organization or company**	Merial Animal Health Ltd.
3.	**Location and postal address**	Ash Road Pirbright Surrey, GU24 ONQ England

4. Source(s) of financing of the reported activity, including indication if the activity is wholly or partly financed by the Ministry of Defence

Private finance. (No Ministry of Defence funding)

5. Number of maximum containment units[3] within the research centre and/or laboratory, with an indication of their respective size (m^2)

1 x SAPO 4

6. If no maximum containment unit, indicate highest level of protection

Defra SAPO 4

7. Scope and general description of activities, including type(s) of micro-organisms and/or toxins as appropriate

Production of inactivated FMD and Bluetongue vaccines for protection of animals

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[1] The containment units which are fixed patient treatment modules, integrated with laboratories, should be identified separately

[2] For facilities with maximum containment units participating in the national biological defence research and development program, please fill in name of facility and mark "Declared in accordance with Form A, Part 2(iii)".

[3] In accordance with the 1963 WHO Laboratory Biosafety Manual, or equivalent

Form A Part 1

Exchange of data on research centres and laboratories[1]

1.	**Name(s) of facility[2]**	Schering-Plough Animal Health
2.	**Responsible public or private organisation or company**	Schering-Plough Animal Health
3.	**Location and postal address**	Breakspear Road South Harefield Uxbridge Middlesex, UB9 6LS England

4. Source(s) of financing of the reported activity, including indication if the activity is wholly or partly financed by the Ministry of Defence

Privately funded. (No funding from Ministry of Defence).

5. Number of maximum containment units[3] within the research centre and/or laboratory, with an indication of their respective size (m^2)

1 x Defra SAPO 4

6. If no maximum containment unit, indicate highest level of protection

Defra Specified Animal Pathogens Order (SAPO) Containment Level 4

7. Scope and general description of activities, including type(s) of micro-organisms and/or toxins as appropriate

Newcastle disease virus- Storage only

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[1] The containment units which are fixed patient treatment modules, integrated with laboratories, should be identified separately

[2] For facilities with maximum containment units participating in the national biological defence research and development program, please fill in name of facility and mark "Declared in accordance with Form A, Part 2(iii)".

[3] In accordance with the 1963 WHO Laboratory Biosafety Manual, or equivalent

Form A Part 2(i)

National Biological Defence Research and Development Program Declaration

1. If there is a national programme to conduct biological defence research and development within the territory of the State Party, under its jurisdiction or control anywhere? Activities of such a program would include prophylaxis, studies on pathogenicity and virulence, diagnostic techniques, aerobiology, detection, treatment, toxinology, physical protection, decontamination and other related research.

Yes

If the answer to (1) is Yes, complete Form A, Part 2 (ii) which will provide a description of the program.

National Biological Defence Research and Development Program

II. Description

1. State the objectives and funding of the program and summarise the principal research and development activities conducted in the program. Areas to be addressed shall include: prophylaxis, studies on pathogenicity and virulence, diagnostic techniques, aerobiology, detection, treatment, toxinology, physical protection, decontamination and other related research.

The objectives of the UK national biological defence research and development programme which is funded largely by the Ministry of Defence are:

a. To assess the hazard to the UK and its Armed Forces from biological and toxin warfare (BTW) agents that might be used by an aggressor.

b. To establish effective means and procedures for the detection, warning, identification, diagnosis and monitoring of BTW agents.

c. To provide protective measures to defend against BTW agents.

d. To provide medical countermeasures for prophylaxis, therapy, and treatment against BTW agents.

The Home Office also funds a programme aimed at enhancing the UK's capability to minimise the impact of a CBRN terrorist incident. Details are given on a separate Form A Part 2(ii).

The scope of the programme is to provide effective protective measures against the range of potential biological and toxin agents that may be used aggressively by terrorists or in times of conflict.

The maintenance of effective protective measures is permitted by the Convention and is seen as complementary to the disarmament obligations contained within the Convention. Effective protective measures diminish the military utility of biological and toxin weapons to a potential aggressor, and hence reduce the likelihood of their use.

The principal areas of work are as follows:

Hazard Assessment

The assessment of the potential hazard to the UK and its Armed Forces requires the evaluation of the range of potential biological and toxin agents that might be utilised by a potential aggressor. Such studies necessarily involve activities such as consideration of the agents' potency and dissemination characteristics, their aerobiology and the way in which they might be utilised by an aggressor in military and terrorist scenarios. This includes the potential impacts of genomics and proteomics. Such work is essential to determine the challenge levels against which detectors, protective equipment and countermeasures must be effective. Current work has included studying the inhalation toxicity of a range of materials and the aerosol survival of pathogenic bacteria and viruses. Operational analysis is also being conducted to examine the effects of BW attack on UK forces and to assess those countermeasures that might be adopted to minimise these effects.

Detection and diagnostics

The ability to detect the presence or release of BTW agents across the battlespace is crucial in providing timely warning to military personnel to allow them to adopt the appropriate protective posture and avoid casualties. In 2007 work has focussed on technologies for improved sample collection, non-specific detection (to detect particulate material), generic detection (to distinguish between biological and non-biological materials) and specific identification (to identify the material). The objective is to develop point detection systems that are man portable and impose less logistic burden than current systems. Research on the development of the Portable Integrated Battlespace Biological Detection Technology has been completed and will be developed by industry. Technology options to provide area surveillance for BTW using stand-off detection based on LIDAR technology or networks of point sensors has continued.

Technologies for the specific identification of BTW currently rely on the use of Biological Recognition Elements, such as antibodies and gene probes. The research programme has continued to develop specific antibodies - recombinant, monoclonal and polyclonal – to extend the range of potential BTW agents than can be identified. Testing is conducted in the laboratory by assessing the binding of the BTW agent to the generally immobilised antibody, monitored either through a linked colour change (eg Dipsticks) or electronically (biosensors).

Gene probe-based technology offers highly sensitive and specific assays for the identification of BTW agents like bacteria and viruses. Work is continuing in order to accelerate and simplify the methodology thus rendering it suitable for military use. Rapid PCR systems have been developed so that this technology can be used in field situations. In addition, similar technologies are also being investigated for use in medical diagnostic systems.

The research programme has continued to assess whether biological mass spectrometry technology could offer unambiguous detection and identification of BTW agents with a significant reduction in whole life costs.

Protection and contamination control

The dissemination of BTW agents by an aggressor is likely to result in the production of particulate aerosols. Effective individual and collective protection (COLPRO) requires the prevention of the inhalation of this particulate challenge or its contact with the skin of personnel. Individual Protective Equipment (IPE) consists of a respirator and suit while collective protection systems provide isolation from a BW agent challenge in the form of whole buildings, rooms, ships or vehicles.

Current research focuses on providing IPE with effective levels of protection but with significantly reduced physiological loading compared with in-service equipment. This involves the development of new materials, integrating the materials into protective suit ensembles, and assessing the performance of the ensembles using non-pathogenic micro-organisms.

COLPRO research aims to design systems that provide the required levels of protection but pose a lower logistical burden on the user. This includes assessing the potential of Commercial off the Shelf (COTS) systems to meet the requirements of UK Armed Forces, as well as incorporating protection into general purpose tentage.

The ability to decontaminate personnel, materiel and infrastructure once an aggressor has dispersed BTW agents is a key element to hazard management and restoring operational tempo. Research aims to develop low logistic burden approaches for decontamination of BTW agents based on liquid formulations, strippable coatings, and reactive gases. Validated test methodologies for determining the efficacy of these decontamination processes are also being developed in parallel.

Medical Countermeasures

The medical countermeasures programme seeks to determine the efficacy of vaccines, antibiotics, antivirals and antitoxins for the prevention of disease caused by BW agents. Projects to identify how animal models of disease can be replaced with in vitro assays, cell or organ culture systems are continuing. Second generation genetically engineered vaccines against plague, anthrax and botulinum toxins have now been devised and these vaccines have transitioned to the development phase. The components of these new vaccines are also more defined than is the case in current vaccines and therefore much less likely to cause transient side effects. In support of these projects, work is underway to identify the exact nature of the protective immune response.

A programme to evaluate an adenovirus vector for vaccine delivery of Venezuelan equine encephalitis virus (VEEV) antigens has continued. Programmes have also continued to devise improved vaccines against tularemia (caused by *Francisella tularensis*) and melioidosis/glanders (caused by *Burkholderia pseudomallei / mallei*). In the case of *Francisella tularensis* the focus of the programme is to devise a rationally attenuated mutant, as a replacement for the LVS vaccine. At the present time a range of mutants are being constructed and tested in the mouse animal model. For *Burkholderia pseudomallei / mallei* the focus is to devise a sub-unit vaccine. Polysaccharides and proteins are currently being evaluated to test the optimal combination. Attenuated mutants of *Burkholderia pseudomallei* are not considered to be good vaccine candidates but are valuable for investigating the nature of the protective immune response. These vaccines will be tested using inhalation challenge models of disease. For ricin toxin the focus of work is on the development of a ricin antitoxin.

The programme to explore the development of broad-spectrum (generic) BW countermeasures has continued. It has three broad elements: to investigate the up-regulation of the innate immune system, for example through immunomodulator stimulation; to determine whether there are cross-protective antigens or common mechanisms of virulence shared by different BW agents; and, to identify broad spectrum antimicrobials. Antibiotics which are newly emerging from industry are being tested to investigate whether they are effective against a wide range of candidate bacterial BW agents. Programmes to investigate whether antibodies can be used to provide protection against virus and toxin BW agents are ongoing. As part of this programme, technologies for delivering protective antibodies to the lung are being investigated.

Arms Control

Dstl staff at Porton Down provide technical advice on CBW non-proliferation to the Ministry of Defence and the Foreign and Commonwealth Office as well as to other Government Departments involved in formulating and implementing UK policy on non-proliferation matters. This has included working towards and participating in: the Review Conferences of the BTWC; the Ad Hoc Group of Governmental experts tasked with identifying and examining potential verification measures; the Special Conference of States Parties held in September 1994; the BTWC Ad Hoc Group; and, the annual Meetings of Technical Experts and of States Parties during the intersessional programmes of work following the 5th and 6th Review Conferences.

Dstl staff assist in collating data for the UK Confidence Building Measures returns and provide technical advice towards the formulation and execution of policy on export control legislation, covering items related to biological weapons proliferation in foreign countries.

Dstl staff also assist the Department for Business, Enterprise and Regulatory Reform (BERR) in its role as the UK National Authority for the Chemical Weapons Convention, providing technical support over declarations, licensing, and inspections. Dstl operates the UK's Single Small Scale Facility at Porton Down, which has been declared under the CWC.

Dstl staff are also involved in the Ministry of Defence Counter-Proliferation and Arms Control Directorate's non-proliferation programme which seeks to redirect foreign former weapons scientists into civil, commercial, and sustainable employment.

2. State the total funding for the program and its source.

The UK national biological defence research and development programme is concerned with the provision of effective measures for the UK and its Armed Forces against the threat that chemical and biological weapons may be used against them. The total UK expenditure on research and development on biological defence for the protection of the UK and its armed forces against micro-organisms and toxins in the fiscal year, 1 April 2007 – 31 March 2008, is forecast to be £55.4M. This included £13.5M for work as project support to the procurement of armed forces biological defence equipment. About £3.2M of the total will come from commercial sources. Work performed at Dstl, Porton Down on research and development including project support accounts for £48.6M of the total.

3. Are aspects of this program conducted under contract with industry, academic institutions, or in other non-defence facilities?

Yes.

4. If yes, what proportion of the total funds for the program is expended in these contracted or other facilities?

During the fiscal year April 1st 2007 to March 31st 2008, 35 extramural contracts on research and development aspects relating to biological defence were in place with universities and other academic institutions, and 46 extramural contracts with other bodies, which are either government funded or industrial companies. Funding for these extramural contracts during the fiscal year totalled approximately £6.8M. This represents 13.4% of the total UK expenditure in the fiscal year on research and development on biological defence. The duration of individual contracts varies from a few months to three or four years, and in a few cases they include periods of work at Dstl. The precise institutions and companies are constantly varying as they are selected according to the needs of the defence programme and the availability of the necessary specialist skills.

5. Summarise the objectives and research areas of the program performed by contractors and in other facilities with the funds identified under para 4.

Contracts are let on specific research topics in support of the main research programme carried out at Dstl.

6. Provide a diagram of the organisational structure of the program and the reporting relationships (include individual facilities participating in the program).

Policy for biological and chemical defence is determined by the Ministry of Defence with the Director of Chemical, Biological, Radiological and Nuclear Policy (CBRN Pol) as the focus. The Counter-Proliferation and Arms Control (CPAC) directorate determines policy on CB arms control. The goals and individual objectives of the research programme are determined by the Ministry of Defence (MOD), with the Research Director CBRN (RD CBRN) within the Research Acquisition Organisation (RAO) of the MOD Science Innovation and Technology (SIT) branch being responsible for managing the planning, contracting and delivery of the research

programme. The Director Equipment Capability CBRN (DEC CBRN) is responsible for the development of CBRN Defence capability and is the customer focus for the output from the research programme. Acquisition of tri-service CBRN protective equipment is carried out by the CBRN Integrated Project Team (CBRN IPT) and the Medical and General Supplies IPT is responsible for the acquisition of CBRN medical countermeasures. Research at Dstl, Porton Down, is undertaken in response to the requirements of these customers within MOD, and Dstl provides technical and policy advice as appropriate.

7. Provide a declaration in accordance with Form A Part 2 (iii) for each facility, both governmental and non-governmental, which has a substantial proportion of its resources devoted to the national biological research and development program, within the territory of the reporting State, or under its jurisdiction or control anywhere.

The only UK facility which has a substantial proportion of its resources devoted to the national biological defence research and development programme is Dstl, for which a declaration is made on Form A Part 2(iii).

Form A Part 2(ii)

National biological defence research and development programme

Description

1. State the objectives and funding of the programme and summarize the principal research and development activities conducted in the programme. Areas to be addressed shall include: prophylaxis, studies on pathogenicity and virulence, diagnostic techniques, aerobiology, detection, treatment, toxinology, physical protection, decontamination and other related research.

The Home Office programme is aimed at enhancing the UK's capability to minimise the impact of a CBRN terrorist incident.

2. State the total funding for the programme and its source.

£7.1 M – Home Office funding

3. Are aspects of this programme conducted under contract with industry, academic institutions, or in other non-defence facilities?

Yes

4. If yes, what proportion of the total funds for the programme is expended in these contracted or other facilities?

85%

5. Summarize the objectives and research areas of the programme performed by contractors and in other facilities with the funds identified under paragraph 4.

The work is aimed at:
Detection and analysis of biological materials
Medical countermeasures to biological agents
Development and assessment of protective equipment against biological materials
Hazard assessment and decontamination of biological agents
Developing an understanding of the impact and spread of biological materials

6. Provide a diagram of the organizational structure of the programme and the reporting relationships (include individual facilities participating in the programme).

Contractors report through controlling Government departments to the HO-led CBRN Delivery Board

7. Provide a declaration in accordance with Form A, part 2 (iii) for each facility, both governmental and non-governmental, which has a substantial proportion of its resources devoted to the national biological defence research and development programme, within the territory of the reporting State, or under its jurisdiction or control anywhere.

The only facility that falls into this category is Dstl, for which a declaration is made on Form A Part 2 (iii).

National Biological Defence Research and Development Program

III. Facilities

Complete on form for each facility declared in accordance with paragraph 7 in Form A Part 2 (ii).

In shared facilities, provide the following information for the biological defence research and development portion only.

1. What is the name of the facility?

Defence Science and Technology Laboratory, Porton Down.

2. Where is it located (include both address and geographical location).

Dstl,
Porton Down,
Salisbury,
Wiltshire,
SP4 0JQ

The geographical location is shown in the attached map (Figure 2). G13 Access Road, centre of south boundary, Latitude 50° 07-N, Longitude 01° 40-W.

3. Floor area of laboratory areas by containment level:

BL2 1200 sq m)
) Biological defence research and development
BL3 922 sq m) element
)
BL4 246 sq m)

4. The organisational structure of each facility:

The organisational structure of Dstl Porton Down is shown in Figure 1. The facility provides research for all aspects of defence, including CBRN. The total number of Dstl staff at Porton Down on 7th February 2008 was 1223 civilians and 12 military. The staff fall into the following categories:

Scientists and Engineers	758
Science support staff	203
Administration staff	179
Administration support staff	83
TOTAL	1223
Military personnel	12

For the biological defence research and development element, the numbers are as follows:

I. Total number of personnel 227

II. Division of personnel

Civilian	220
Military	7

III. Division of civilian personnel by category

Scientists and Engineers	182
Science support staff	18
Administration staff	17
Administration support staff	3

IV. List the scientific disciplines represented in the scientific/engineering staff.

Aerobiology, aerosol physics, mathematics, chemistry, chemical engineering, physics, bacteriology, biology, biophysics, bioinformatics, virology, genetics, immunology, medicine, veterinary science, microbiology, biochemistry, molecular biology, physiology, pharmacology, neuropharmacology, psychology, toxicology, engineering, electronics, ergonomics, hydrodynamics, information science, materials science, operational analysis, operational research, information technology, CB defence science.

V. Are contractor staff working in the facility? If so, provide an approximate number**.**

A small number of contractors work on the programme from time to time. Other contractor staff carry out building and maintenance work and some administrative functions.

VI. What is (are) the source(s) of funding for the work conducted in the facility, including indication if activity is wholly or partly financed by the Ministry of Defence?

Porton Down is one of the sites of the Defence Science and Technology Laboratory (Dstl), which is part of the Ministry of Defence. Some work, approximately 18%, is carried out for other governmental and commercial customers.

VII. What are the funding levels for the following programme areas

Research	£36.0M
Development	£19.5M

Test and Evaluation: This is carried out as required to support research and development. Not separately funded in UK.

VIII. Briefly describe the publication policy of the facility**:**

Staff at Dstl are encouraged to publish their work in the scientific literature.

IX. Provide a list of publicly available papers and reports resulting from the work during the previous 12 months. (To include authors, titles and full references).

Attached as Annex.

5. Briefly describe the biological defence work carried out at the facility, including type(s) of micro-organisms including viruses and prions and/or toxins studied, as well as outdoor studies of biological aerosols.

The work of Dstl, Porton Down has been reported under Question 1 of Form A Part 2 (ii). Projects currently underway include:

a. The assessment of the hazard posed by micro-organisms and toxins when used by an aggressor as a BW.

b. Research into systems to facilitate collection, detection, warning, and identification of BW agents. This work includes the evaluation of collection and detection systems in outdoor studies using microbiological simulants and research into the composition of naturally occurring biological aerosols.

c. Research to establish the protection afforded by materials and CBRN defence equipment against BW agents. This work includes the evaluation of military equipment both in the laboratory and in outdoor studies using microbiological simulants.

d. Research into formulations and techniques for decontaminating microbiologically contaminated equipment using suitable simulants.

e. Rapid identification of micro-organisms and toxins by the use of monoclonal antibodies and gene probes.

f. Studies on the mechanism of action and treatment of toxins.

g. Therapies for bacterial and viral infections.

h. Studies on the mechanisms of pathogenicity of viruses and bacteria and the development of improved vaccines.

ANNEX TO Form A Part 2(iii)

BIOLOGICAL DEFENCE RESEARCH PUBLICATIONS FOR Dstl PORTON DOWN 2007

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Figure 1: Organisational Structure of Dstl Porton Down. (Departments contributing to the Biological Defence Programme are shown in grey)

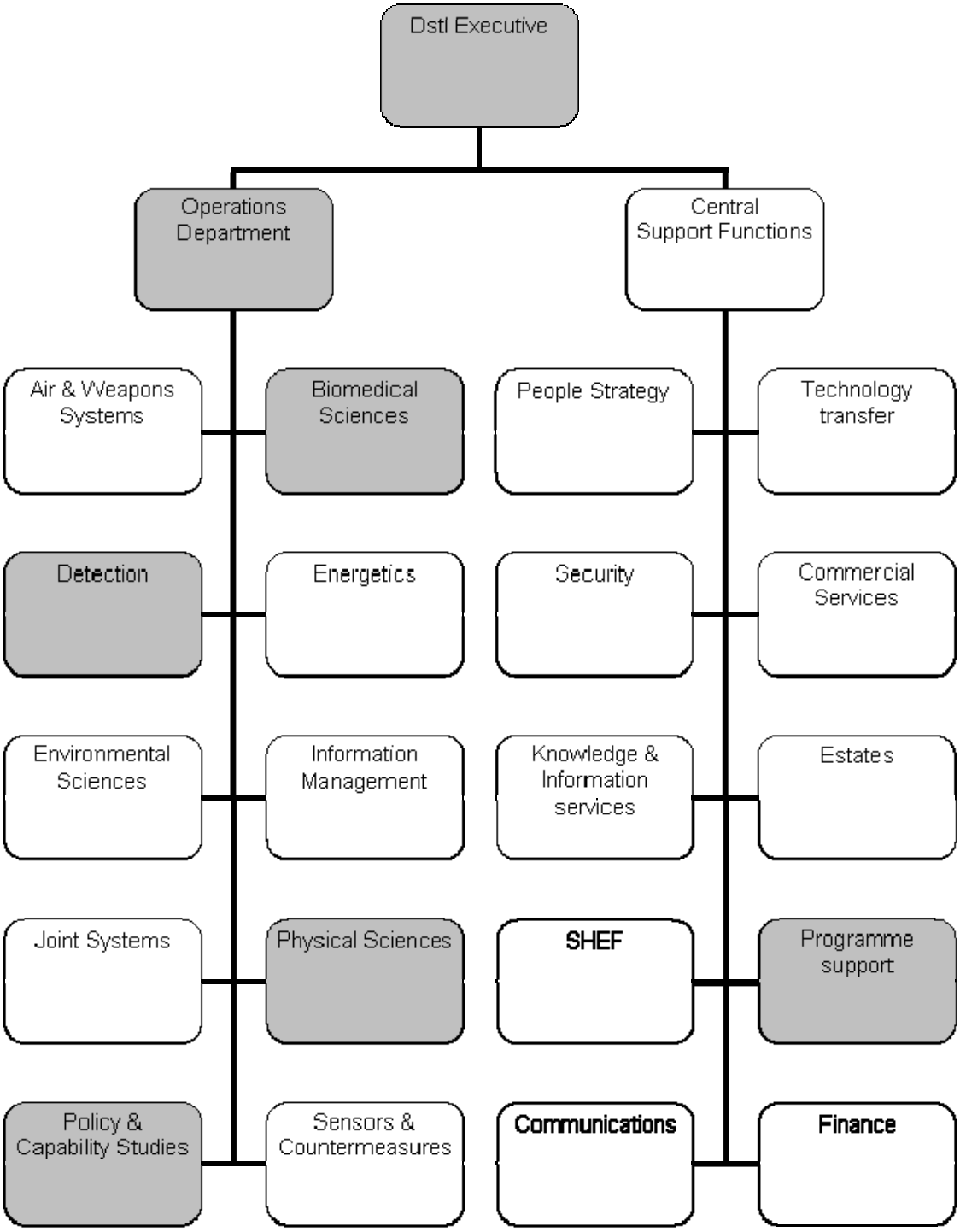
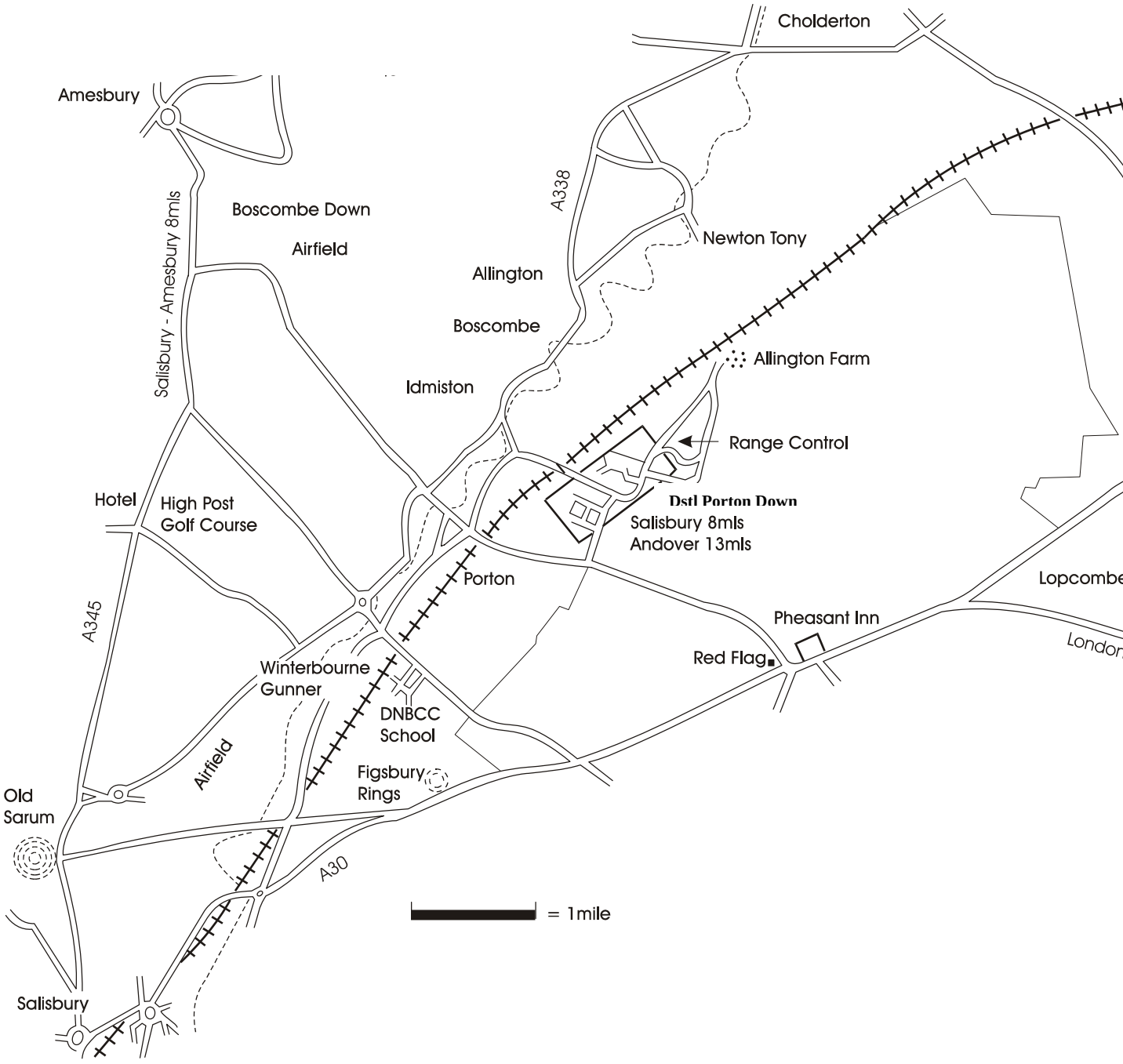


Figure 2: Routes to Dstl Porton Down



Form B(i)

Background information on outbreaks of reportable infectious Diseases in humans - England and Wales

Data from Statutory Notifications of Infectious Diseases (England and Wales)

Disease	Number of cases per year				
	2003	2004	2005	2006‡	2007†
Acute encephalitis	15	20	19	19	18
Acute poliomyelitis	0	0	0	0	0
Anthrax	0	0	0	1	0
Cholera	26	31	34	37	42
Diphtheria**	13	10	9	10	10
Dysentery	1,047	1,203	1,237	1,122	1,220
Food poisoning	70,895	70,311	70,407	70,603	72,649
Leptospirosis	24	14	31	24	35
Malaria	791	609	679	613	427
Measles**	2,488	2,356	2,089	3,705	3,700
Meningitis	1,468	1,272	1,381	1,496	1,271
meningococcal	642	564	578	621	568
Haemophilus influenzae	62	45	44	58	32
other specified	552	483	551	603	518
unspecified	212	180	208	214	153
Meningococcal septicaemia (without meningitis)	732	691	721	657	670
Mumps**	4,204	16,367	56,256	12,841	7,257
Ophthalmia neonatorum	102	85	87	100	83
Paratyphoid fever	99	134	119	185	123
Plague	0	0	0	0	0
Rabies	0	0	0	0	0
Relapsing fever	0	0	0	0	0
Rubella**	1,361	1,287	1,155	1,221	1,100
Scarlet fever	2,553	2,201	1,678	2,157	1,948
Smallpox	0	0	0	0	0
Tetanus	8	12	3	0	5
Tuberculosis	6,518	6,723	7,628	7,686	7,027

Typhoid fever	176	146	179	201	205
Typhus fever	2	1	1	6	1
Viral haemorrhagic fever	1	0	0	5	1
Viral hepatitis	4,004	3,932	4,109	4,007	3,885
Hepatitis A	1,194	784	513	433	334
Hepatitis B	1,151	1,215	1,325	1,165	1,271
Hepatitis C	1,574	1,851	2,120	2,194	2,041
Whooping cough	409	504	594	550	1,090
Yellow fever	0	0	2	0	0

† *Provisional annual totals*
‡ *Adjusted annual totals*
** *Note: In recent years a substantial proportion of notified cases of these diseases are shown subsequently not to be the implicated infection but do not get de-notified*

Form B(i)

Background information on outbreaks of reportable infectious diseases in humans - Northern Ireland

Data from statutory Notifications of Infectious Diseases (Northern Ireland).

Diseases	Number of cases per year				
	2003	2004	2005	2006†	2007‡
Acute Encephalitis/Meningitis:Bacterial**	69	59	48	46	33
Acute Encephalitis/Meningitis:Viral**	9	5	18	12	3
Anthrax	0	0	0	0	0
Chickenpox **	4459	3768	3227	3034	2823
Cholera	0	0	1	1	0
Diphtheria	0	0	0	0	0
Dysentery	14	8	7	7	10
Food Poisoning	1268	1666	1409	1469	1321
Gastro-enteritis (persons under 2)	867	697	736	718	762
Hepatitis A**	4	12	4	4	1
Hepatitis B**	21	45	41	42	50
Hepatitis Unspecified:Viral**	15	2	29	2	1
Legionnaires Disease**	4	4	6	5	10
Leptospirosis**	0	0	1	1	1
Malaria**	1	5	2	6	4
Measles	57	90	56	52	31
Meningococcal Septicaemia**	76	82	66	75	42
Mumps***	180	780	4556	205	164
Paratyphoid Fever	0	0	0	0	0
Plague	0	0	0	0	0
Polio (paralytic)	0	0	0	0	0
Polio (acute)	0	0	0	0	0
Rabies	0	0	0	0	0
Relapsing Fever	0	0	0	0	0
Rubella***	34	39	31	33	26
Scarlet Fever	304	228	186	213	214
Smallpox	0	0	0	0	0
Tetanus	0	0	0	0	0
Tuberculosis (Pulmonary)	26	59	37	34	44
Tuberculosis (Non Pulmonary)	12	14	31	14	19
Typhoid	0	0	1	1	3

Typhus	0	0	0	0	0
Viral Haemorrhagic Fever	0	0	0	0	0
Whooping Cough	40	28	28	28	16
Yellow Fever	0	0	0	0	0

*** Only notifiable from 16 April 1990*
**** Only notifiable from October 1988*
† *Final figures for 2006*
‡ *Provisional figures for 2007 but have been validated by the four Northern Ireland Health Boards*

Please note: these figures are not classified as outbreaks and are only suspected cases reported by General Practitioners.

Form B(i)

Background information on outbreaks of reportable infectious diseases in humans - Scotland

Data from Statutory Notification of Infectious Diseases, Health Protection Service, Scotland.

Disease	Number of cases per year				
	2003	2004	2005	2006*	2007**
Anthrax	0	0	0	1	0
Bacillary dysentery	83	90	102	109	157
Chickenpox	19875	21333	15991	16959	19950
Cholera	1	1	4	3	8
Continued Fever	0	0	0	0	0
Diphtheria	0	0	0	0	1
Erysipelas	28	28	17	26	20
Food poisoning	6892	6804	7143	6983	7200
Legionellosis	25	27	31	37	43
Leptospirosis	4	1	5	2	2
Lyme disease	42	57	63	130	215
Malaria	28	20	19	18	15
Measles	181	257	181	259	164
Meningococcal infection	117	147	149	136	152
Mumps	181	3595	5729	2825	2694
Paratyphoid fever	0	0	0	0	1
Plague	0	0	0	0	0
Poliomyelitis	0	0	0	0	0
Puerperal fever	2	2	2	0	0
Rabies	0	0	0	0	0
Relapsing fever	2	0	0	0	0
Rubella	130	222	141	149	143
Scarlet fever	395	213	211	269	315
Smallpox	0	0	0	0	0
Tetanus	1	1	0	0	0
Toxoplasmosis	3	4	2	1	0
Tuberculosis: resp	296	351	214	244	235
Tuberculosis: non-resp	126	112	107	117	105
Typhoid fever	2	2	1	3	3
Typhus fever	0	1	0	0	0
Viral haemorrhagic fevers	0	0	0	0	0
Viral hepatitis	1159	1063	1063	982	1342
Whooping cough	60	87	57	66	97

* *Confirmed figures*
** *Provisional figures*

Form B(i)

Background information on outbreaks of reportable Infectious diseases in animals - United Kingdom

Disease	Number of confirmed cases per year				
	2003*	2004	2005	2006†	2007
African Horse Sickness					
African Swine Fever					
Anthrax				1	
Aujeszky's Disease					
Notifiable Avian Disease				3	5
Bat Rabies		1		1	1
Bovine Spongiform Encephalopathy					
Bluetongue					66
Brucellosis (Brucella abortus)					
Brucellosis (Brucella melitensis)					
Classical Swine Fever					
Contagious agalactia					
Contagious Bovine Pleuro-pneumonia					
Contagious Epididymitis (Brucella ovis)					
Contagious Equine Metritis Organism (CEMO)			1	1	1
Dourine					
Enzootic Bovine Leukosis					
Epizootic Haemorrhagic Virus Disease					
Epizootic Lymphangitis					
Equine Viral Arteritis		1			
Equine Viral Encephalomyelitis					
Equine Infectious Anaemia					
Foot and Mouth Disease					8
Glanders and Farcy					
Goat Pox					
Lumpy Skin Disease					
Newcastle Disease			1	1	
Paramyxovirus of pigeons					
Pest des Petits Ruminants					
Rabies					
Rift Valley Fever					
Rinderpest (Cattle plague)					
Scrapie					
Sheep pox					
Swine Vesicular Disease					
Teschen Disease(Porcine enterovirus encephalomyelitis)					
Tuberculosis (Bovine TB)					

Vesicular Stomatitis					
Warble Fly					
West Nile Virus					

* *statistics not available*
† *checked against final statistics for 2006*

Form B(i)

Background information on outbreaks of reportable infectious diseases in plants – United Kingdom

Disease	Number of cases per year				
	2003	2004	2005	2006	2007
Ciborinia camelliae (Camelia flower blight	5				
Clavibacter michiganesis subsp. *sepedonicus* (Ring rot in seed potatoes)	1	2			
Colletotrichum acutatum (Strawberry black spot) in propagating crops	2				2
Columnea latent viriod					4
Erwinia amylovora (Fireblight)	23				
Florida passionflower virus					1
Pepino mosaic virus in tomato crops	6			8	3
Phytophthora kernoviae		16	19	7	10
Phytophthora ramorum (Sudden Oak Death)	209	141	163	74	113
Plasmopara obducens (Downy mildew) of Impatiens	13				
Potato spindle tuber viroid on tomato crops	1				
Puccinia horiana (Chrysanthemum white rust)					

Disease	Number of cases per year				
	2003	2004	2005	2006	2007
Ralstonia solanacearum (potato brown rot)	1		1		
Ralstonia solanacearum (potato brown rot) in river surveys	22	6	4	1	6
Xanthomonas fragariae		3	2		1

The serious diseases above were all investigated but occurrence could be explained by normal introduction means and there was no evidence of deliberate malicious introduction. There were also a number of findings of less serious routine notifiable diseases but these can also be explained by natural means of spread or by trade pathways.

Form C

Encouragement of publication of results and promotion of use of knowledge

At the Third Review Conference it was agreed that States parties continue to implement the following:

> **"Encouragement of publication of results of biological research directly related to the Convention, in scientific journals generally available to States parties, as well as promotion of use for permitted purposes of knowledge gained in this research."**

Nothing new to declare

Form D

Active promotion of contacts

1. Planned international conferences, symposia, seminars, and other similar forums for exchange.

For each event the following details are provided:

(a)	**name of the conference, etc**.	International Brucellosis Conference.
	arranging organization(s), etc.	Veterinary Laboratories Agency
	time	September 2008
	place	Royal Holloway College, Egham, Surrey, England
	main subject(s) for the conference, etc.	Brucellosis
	conditions for participation	-
	point of contact for further information, registration, etc.	Mrs Judy Stack tel: 01932 57610

(b)	**name of the conference, etc**.	XI International Symposium on Nidoviruses (Coronaviruses)
	arranging organization(s), etc.	Institute for Animal Health, UK
	time	22-27 June 2008
	place	St Catherine's College, Oxford,
	main subject(s) for the conference, etc.	Molecular biology, immunology, pathology, vaccines, epidemiology
	conditions for participation	Open to all
	point of contact for further information, registration, etc.	Dr D Cavanagh Institute for Animal Health Compton Newbury Berkshire RG20 7NN Dave.cavanagh@bbbsrc.ac.uk www.nido08.org.uk

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(c)	**arranging organisation(s)**	Health Protection 2008
	time	15-17 September 2008
	place	University of Warwick, UK
	main subject(s) for the conference, etc.	- health protection - infectious disease - chemical & radiation exposure - emergency preparedness, (including CBRN)
	conditions for participation	by application
	point of contact for further information, registration, etc.	www.healthprotectionconference.org.uk

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2. Information regarding other opportunities

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Form E

Declaration of legislation, regulations and other measures

Relating to		Legislation	Regulations	Other measures	Amended since last year
(a)	Development, production stockpiling, acquisition or retention of microbial or other biological agents, or toxins, weapons, equipment and means of delivery specified in Article I	YES	YES	YES	YES

Amendments since last year:

- Statutory Instrument 2007 No. 926 The Part 7 of the Anti-Terrorism, Crime and Security Act 2001 (Extension to Animal Pathogens) Order 2007
- Statutory Instrument 2007 No. 929 The Schedule 5 to the Anti-Terrorism, Crime and Security Act 2001 (Amendment) Order 2007

Link to the UK's Anti-Terrorism, Crime and Security Act 2001 (ATCSA):
http://security.homeoffice.gov.uk/legislation/current-legislation/acsa-2001/pathogens-toxins

Link to text of the UK's Biological Weapons Act 1974:
http://www.statutelaw.gov.uk/

(b)	Exports of micro-organisms* and toxins	YES	YES	YES	YES

Council Regulation (EC) No. 1183/2007 made a number of changes to the microorganisms and toxins listed in Annex I of Council Regulation (EC) No. 1334/2000 on the control of exports of dual-use items and technology.

Link to current UK strategic export control lists:
http://www.berr.gov.uk/files/file42587.pdf

Further information on UK export control legislation can be found at:
http://www.berr.gov.uk/europeandtrade/strategic-export-control/index.html

(c)	Imports of micro-organisms* and toxins	YES	YES	YES	YES

Links to UK import/export legislation for animal and plant pathogens:
http://www.defra.gov.uk/animalh/diseases/pathogens/index.htm
http://www.defra.gov.uk/planth/phorder/index.htm

* Micro-organisms pathogenic to man, animals and plants in accordance with the Convention.

Form F

Declaration of past activities in offensive and/or defensive biological research and development programmes

1. Date of entry into force of the Convention for the State party.

26 March 1975

2. Past offensive biological research and development programmes:

Nothing new to declare

Form G

Declaration of vaccine production facilities

1. **Name of facility:** MedImmune UK Ltd

2. **Location (mailing address):** Plot 6 Renaissance Way
Boulevard Industry Park
Speke
Liverpool L24 9JW

3. **General description of the types of diseases covered:**

Influenza vaccine

Form G

Declaration of vaccine production facilities

1. Name of facility: Novartis Vaccines and Diagnostics Limited

2. Location (mailing address): Gaskill Road
Speke
Liverpool, L24 9GR

3. General description of the types of diseases covered:

During 2007, Influenza vaccines only were manufactured at this facility. Two distinct types:-

a) Northern Hemisphere Influenza vaccine - Cultivation of egg adapted influenza virus Three strains incorporated within the vaccine (Trivalent).

b) H5N1 avian influenza vaccine (monovalent i.e. single strain) - Cultivation in eggs of attenuated H5N1 strains produced by 'Reverse Genetics'. Designated at containment category allocated Cat 2 (Enhanced). The enhancements refer to a requirement for additional personal protection (use of RPE) and vaccination of operators with current Northern Hemisphere Influenza vaccine.
This agent is designated as a GMO & an appropriate manufacturing licence (GM consent) has been granted from the UK Competent Authority.
IAPO (the 'Importation of Animal Pathogens Order', 1980) does not apply to these strains due to attenuation at the genetic level.

Transition to a new purpose built influenza vaccine manufacturing facility is planned at the start of the 2009 manufacturing campaign. Some laboratories in the new facility are already operational.

Form G

Declaration of vaccine production facilities

1. Name of facility:

Health Protection Agency
Centre for Emergency Preparedness
and Response

2. Location (mailing address):

Porton Down
Salisbury
Wiltshire
SP4 0JG
England

3. General description of the types of diseases covered:

Manufacturer of anthrax vaccine

Form B (ii)

Information on outbreaks of infectious diseases and similar occurrences, that seem to deviate from the normal pattern

1.	Time of cognizance of the outbreak	August 2007
2.	Location and approximate area affected	Surrey county, England
3.	Type of disease/intoxication	Foot and mouth disease
4.	Suspected source of disease/ intoxication	Laboratory escape
5.	Possible causative agent(s)	Foot and mouth disease virus
6.	Main characteristics of systems	.....
7.	Detailed symptoms, when applicable	
	- respiratory	.....
	- circulatory	.....
	- neurological/behavioural	.....
	- intestinal	.....
	- dermatological	Vesicular condition of the feet, buccal mucosa and, in females, the mammary glands
	- nephrological	.....
	- other	.....
8.	Deviation(s) from the normal pattern as regards	
	- type	.....
	- development	.....
	- place of occurrence	FMDV is Exotic to the UK
	- time of occurrence	.....
	- symptoms	.....
	- virulence pattern	.....

	- drug resistance pattern	.....
	- agent(s) difficult to diagnose	.....
	- presence of unusual vectors	.....
	- other	.....
9.	Approximate number of primary cases	.....
10.	Approximate number of total cases	238 animals at 8 premises
11.	Number of deaths	0
12.	Development of the outbreak	In late July there was laboratory escape of pathogen with subsequent local spread. Spread contained by measures taken below and last case was reported on 29 August 2007.
13.	Measures taken	Stamping out, quarantine, movement control inside the country, zoning, disinfection of infected premises/ establishment(s), no vaccination and no treatment of affected animals. Further information is available at: http://www.defra.gov.uk/animalh/diseases/fmd/investigations/index.htm