Annexure 1

About the Biological and Toxin Weapons Convention

(Source: Accessed 22 April 2006, URL: http://opbw.org/btwc/convention-text.html.)

The Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction—more commonly known as the Biological and Toxin Weapons Convention (BTWC)—was simultaneously opened for signature in Moscow, Washington and London on 10 April 1972 and entered into force on 26 March 1975.

The Convention bans the development, production, stockpiling, acquisition and retention of microbial or other biological agents or toxins, in types and in quantities that have no justification for prophylactic, protective or other peaceful purposes. It also bans weapons, equipment or means of delivery designed to use such agents or toxins for hostile purposes or in armed conflict. The actual use of biological weapons is prohibited by the 1925 Geneva Protocol and Article VIII of the BTWC recognizes that nothing contained in the Convention shall be construed as a derogation from the obligations contained in the Geneva Protocol. As of November 2001, 162 states had signed the BTWC and 144 of these had ratified it.

Main Articles

- Article I defines the scope of the BTWC's prohibition (the so-called general purpose criterion). This includes all microbial and other biological agents or toxins and their means of delivery. Subsequent Review Conferences have reaffirmed that the general purpose criterion encompasses all future scientific and technological developments relevant to the Convention. The objects themselves (biological agents or toxins) are not prohibited, only their purpose. Permitted
purposes are defined as prophylactic, protective and other peaceful purposes. The objects may not be retained in quantities that have no justification or which are inconsistent with the permitted purposes.

- Article II requires each State Party, no later than nine months after entry into force of the Convention, to destroy or divert to peaceful purposes all agents, toxins, weapons, equipment and means of delivery specified in Article I.

- Article III prohibits States Parties from transferring or otherwise encouraging other states or organizations to acquire any of the agents, toxins, weapons, equipment or means of delivery specified in Article I.

- Article IV requires States Parties to take any necessary national measures (e.g., passage of national laws) to prohibit and prevent the misuse of biological agents, toxins, weapons, equipment and means of delivery within their territories. Only a small number of States Parties have implemented this provision.

- In Article V, States Parties undertake to consult with one another and to cooperate in solving any problems that may arise in relation to the Convention.


- In Article VII, States Parties undertake, if requested, to assist any Party which the Security Council decides has been exposed to danger as a result of violation of the Convention.

- Article VIII stipulates that nothing in the Convention shall in any way limit or detract from obligations assumed under the Geneva Protocol.

- Article IX commits States Parties to continue negotiations in good faith towards a chemical weapons convention.

- In Article X, States Parties undertake to facilitate the fullest possible exchange of equipment, materials and scientific and technological information for the use of biological agents and toxins for peaceful purposes.
• In Article XII, provision is made for a conference of States Parties to the Convention to review the operation of the Convention, with a view to assuring that the purposes of the preamble and the provisions of the Convention, including the provisions concerning negotiations on chemical weapons, are being realized. Such review shall take into account any new scientific and technological developments relevant to the Convention. Such Review Conferences have been held at five yearly intervals and have agreed Final Declarations which have contained extended understandings of the Convention.
Annexure 2
Format of Interview

The interview format was the semi-structured qualitative interview. Since open access to such literature is difficult, the interview was structured to gather views on the various technical aspects. Deciding that candidates should reside in two countries narrowed the population for formal interviews. These countries - Switzerland, the United Kingdom - were chosen for practical reasons of field work. Almost all the interviews were tape-recorded. Notes were taken during only two of the interviews, given the limited available time available with the candidates.

1. What is the criterion for deciding the potential of a weapon?
2. Do you agree with the generally accepted idea of mass destruction (killing of 1000 people or more)?
3. If No, then According to you what is mass destruction?
4. What are the qualities of a weapon that makes it qualify as a WMD?
5. How are these qualities decided?
6. What factors, historical construction, past experience, practical use or popular theorizing were responsible to evolve the understanding of WMD as it is now?
7. Has the term “WMD” acquired a new standard in international relations?
8. Do you think that categorizing a weapon as a WMD, kind of elevates its stature to mythical standards?
9. What other aspects (number of people killed or the buildings destroyed) ought to be included while demarcating an event as an act of mass destruction?
10. Do you think the present understanding of mass destruction has to be made more specific?
11. What are the means to make the definition more specific, given no formal text exists that defines WMD?
12. What are your reactions to the argument that the definition of WMD be never concretized, so that the new threats, especially regarding the developments in biological sciences and the potential for malign use can be accommodated?

13. Amongst the three, Nuclear Biological and Chemical, which is the most deadly?

14. Would biological weapons function at the same level of nuclear weapons regarding “deterrence”?

15. Biological weapons may not kill the same number of people, may infect the agent and are insidious weapons, given this, what are the imperatives for a state to acquire biological weapons?

16. Why does a nuclear state decide to start a biological weapons programme when any threat from a conventional or nuclear weapon can be credibly countered by a nuclear weapon?

17. Given the lack of inherent military potential of biological weapons why does a state decide to start biological weapons programme?

18. What is the role of fear, psychosis in the military effectiveness of a weapon?

19. Are not biological weapons a WMD because of the fear and dread they generate?

20. Are not biological weapons a WMD because of the way disease is viewed in the society?

21. What are your reactions to the statement that the issue of biological weapons is no longer a security but a political issue (it has made a leap from being securitized to politicized)?

22. Don’t you think that the issue of biological weapons as WMD has been played out knowingly on the psychosis of the people, without informing them about the available preventive measures?

23. What is the role of the agencies like media, political body in creating and maintaining the threat of biological weapons?

24. What are the reasons for the body politic to highlight the threat of biological weapons as WMD?

25. What is the role of the domestic scientific industry, business interests in making, creating and maintaining this threat?
26. What is the role of stakeholders like the military, the biological scientific community and the science advisors in the issue of biological weapons?

27. Every scientific and technological development works in the larger social fabric; therefore if these developments can be put to malign use, these ideas also speak about the changing mindsets in our societies. Comment.

28. What are the various ways of acquiring a biological agent?

29. Out of the given, which is most successful method of acquiring a biological agent?
   - Seed stocks
   - Natural environment
   - Culture collections in the industrialized and some developing countries
   - Sites of recent outbreaks of contagious diseases
   - National collections
   - Theft from a research laboratory, hospital, or public health service laboratory,
   - Obtaining biological agents from a rogue state, a disgruntled government scientist, or a state sponsor.

30. Out of the various ways that have been listed above which is the most feasible one in terms of technicality (ensuring purity of the sample etc)?

31. What are the considerations for deciding the source of acquiring an agent?

32. Will the type of agency (state/non-state actor) have any bearing on the different modes of acquiring the biological agent? In other words is it easy to obtain biological agents illegally?

33. Is it easy to acquire bacterial rather than viral agents?

34. What are the ways to test the suitability of the biological agent for weapon purpose?

35. What are the various ways of verifying the acquired biological agent?

36. What are some of the ways in which one can verify the agent at the source?

37. What are the ways in which one is able to verify the agent away from the source, that is after some time and distance?

38. Are there methods available to verify the kind of agent outside the laboratory setup?
39. How easy is the availability of these sources?
40. What are the means of manufacturing these verifying tools and experiments?
41. What is the state of virulence once the agent is acquired?
42. How can the virulence of the agent be increased?
43. What are the various ways to enhance the virulence of the agent?
44. What are the means to engineer the virulent form of the agent?
45. What will be the required minimum quantity of the agent to engineer a virulent form of the agent?
46. Out of the four agents given, grade them according to the problems involved in engineering a virulent form?
   • Anthrax
   • Plague
   • Smallpox
   • Tularemia
47. What are the ways to settle the imperative of field test before actually integrating the agent in the munitions?
48. What are the means to develop and pilot test production process?
49. Given the difficult issue of field tests, how can the potential of an engineered/mass-produced biological agent settled?
50. What are the technical problems of producing the engineered/virulent form at Mass Scale? What is their order?
   • Containment measures
   • Fear of infection
   • Infrastructure Limitations
   • Any Other?
51. What are your limitations to the generally accepted idea that aerosolization is one of the most efficient forms of delivering biological agents as WMD?
52. Given the need to aerosolize an agent, which is the agent that would involve a complex process of aerosolization? What is the order?
   • Anthrax
   • Plague
53. Once the agent gets aerosolized, which of the four will be relatively more stable?
   - Anthrax
   - Plague
   - Small Pox
   - Tularemia

54. What are the various methods of storing the biological agent?
55. Are there different methods for storing the biological agent for military and for long term (peaceful) use otherwise?
56. What are the problems of storing the agent thus obtained?
57. Will the agents lose their virulence once stored?
58. Is there any method of storing these agents such that their virulence remains intact (the virulence is not lessened neither it degenerates)?
59. Out of the four which agent can remain relatively stable for a long time without losing its virulence?
   - Anthrax
   - Plague
   - Small Pox
   - Tularemia

60. What are the means/safety measures during Stockpiling (To store materials, goods, or assets for future use)?
61. What are the safety measures have to be followed while producing a highly virulent strain of biological agent?
62. What will be the kind of Infrastructure required?
63. Given a hypothetical construct that one needs to build a lab for producing agents for hostile use, what will be the kind of infrastructure that is required?
64. What is the role of the biotechnology industry, associated with the biological weapons programme of a state? To specify, what is the relationship between the position of biotechnology industry and the prospect of developing a biological weapons programme in the state.
65. What has to be the minimum level of Biotechnology industry in the state?

66. What has to be the required availability of minimum technical expertise in the state?

67. What will be the financial requirements to successfully operate a biological weapons production site?

68. What is the minimum required amount of money with which to establish and run a biological weapons production facility?

69. What are the various ways of delivering the agent?

70. What is the most efficient way of delivering the biological agent?

71. What are the different methods of delivery at short and also at long distances?

72. Would different biological agents require different kinds of delivering methods?

73. If yes, please specify what each agent would require?
   
   • Anthrax
   • Plague
   • Small Pox
   • Tularemia

74. What will be the role of the following factors on the impact of the agent once it is delivered?
   
   • Quantity of Agent
   • Virulence of Agent
   • Place of delivery - environment and people
   • Climate

75. Once the agent is delivered, which of the above will have a crucial bearing on the efficacy of the agent?

76. Can an equation like the efficacy of the agent with these crucial parameters be worked out?

77. Once the agent is delivered, given a scenario where the target is unprepared, who are at a bigger risk, the civilians or the military?

78. Does the basic military training equip the soldiers against a biological weapons attack?
79. What are some of the common sense escape routes/prevention mechanisms in the wake of a biological weapons attack?

80. Please specify?

81. What are the health preparedness measures that should be taken care of in the case of a biological weapons attack?

82. What should be the degree of domestic health preparedness?

83. What should be the range of the domestic health preparedness?

- Availability of drugs/antibiotics
- Availability of quarantine measures
- Availability of Medical/Trained Personnel

84. What are the means to detect a biological agent release?

85. What is the availability of these means? To specify, can the means be made available to a common man, with the district authorities, or at the highest level of decision-making?

86. What are the prophylaxis measures?

87. What are the effective hygienic measures?

88. What are some of the long-term and short-term measures against biological weapon attack?

89. Of the three stages, production, delivery and maintaining the potency of the biological agent, at which stage will one encounter technical difficulties?