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June 27, 1994
(Via FAX to 9 (202) 647-7663)

Dr. Thomas Dashiell
U.S. Arms Control & Disarmament Agency
MA/STP Room 5486
320 21st Street, N.W.
Washington, DC 20451

Dear Dr. Dashiell:

I was very pleased to have the opportunity to discuss with you at JASON matters of BW and CW, and also to be able to chat with you at the JASON reception 06/23/94. You mentioned that Matt Meselson had, of course, provided you with a copy of his manuscript, and I now have two questions for you. The first is to help me understand the action of pulmonary anthrax. According to my understanding, if an animal is given penicillin or other antibiotic before being challenged with anthrax aerosol, it would not become ill, so long as antibiotics continued to be administered. But I understood you to say that only a few percent of people might be saved in this way if subject to a dose several times the LD50, and I did not understand this statement.

On 06/24/94, JASON heard from additional folks knowledgeable about BW, and they said that indeed it was correct that an animal or human could be maintained disease-free on antibiotics even long enough to receive an effective course of vaccine and so develop immunity so that even spores left in the lungs could not cause disease after the antibiotic administration ceased.

To help my understanding, I would really like to know your view on this point.

My second question concerns the difference of view between you and Meselson in the calculation of the amount of aerosol that must have been released from the plant at Sverdlovsk to cause the observed human and animal fatalities. Matt figures something between a milligram and a gram would have done the job, using a reasonable weather-dependent dispersion model. I understand that it might be possible to release kilograms of anthrax without having more aerosol than this, but I really would like to see a calculation that reasons from the observed fatalities to the release of a kilogram or more of anthrax aerosol.

Could you accommodate me on this?

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You can send a reply by FAX direct to me at JASON at (619) 455-3943, call me at (619) 459-9701, or we could even talk (if necessary) on the STU-3.

Sincerely yours,

Richard L. Garwin

CC:

N.S. Lewis, JASON. (Via FAX to (619) 455-3943)

RLG:jah:T178TD:062794..TD

→ Matt Posolon from Dept ^{GARWIN} ^{Garwin}
June 29, 1994 (617) 495-8308

To: Dr. Richard L. Garwin
c/o JASON
From: Tom Dashiell

Dear Dr. Garwin:

In response to your fax of 27 June, I am enclosing a copy of probably the most authoritative article I know of regarding medical treatment of anthrax; cutaneous, gastrointestinal and pulmonary. As noted therein, the outcome of septicemic anthrax is usually fatal in spite of antibiotic treatment. At the same time prophylactic treatment (if you know someone has been exposed) with penicillin followed by vaccination can be effective. However, if prophylaxis is stopped before immunity develops, death can still result. This is why early detection and identification is so critical to the biological defense effort. Should you have further questions on medical treatment I suggest that Col. Arthur M. Friedlander at the US Army Medical Research Institute of Infectious Diseases, Fort Detrick, Frederick, Md is probably the best source of information

With regard to your second question, I find that I do not have the latest copy of Matt's paper, he let me scan it at a meeting here in Washington about a month ago but he has not yet forwarded me a copy. I have not reviewed his methodology but probably ten years ago we did a series of calculations which indicated about four kilograms would be required to provide the total coverage at effective dose levels which we believe resulted from the release. Please bear in mind that our calculation used a source strength of about one percent, i.e. very low since a dissemination device was not used, the source was an accidental release. We based this on several likely accidents, ranging from a dryer mishap or a milling accident to a blow-out of the building filter and ventilation system (all of which are feasible). I do not have copy of that calculation but we could reconstruct it I'm sure, however, I am not the only one who questions the gram or a few grams which Matt's calculations purport. Friends at Fort Petrick agree completely with our earlier calculations, especially when the time of infection, secondary aerosol effects, decontamination schedules, wind velocity at the time and other factors are all considered in the calculation.

I'm not sure why everyone concentrates on anthrax as "the" biological warfare agent, there are many others which we believe are far superior in effects, production ease, etc.. I have rambled long enough, I hope that this is useful to you and your colleagues and I would be pleased to help in any other questions that may develop.

JUN 29 '94 13:30

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JUN 30 '94 16:08 FROM MITRE JASONS

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June 29, 1994
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Dr. Thomas Dashiell
U.S. Arms Control & Disarmament Agency
MA/STP Room 5486
320 21st Street, N.W.
Washington, DC 20451

Dear Dr. Dashiell:

Thanks very much for your FAX of 06/29/94. I wouldn't say that it took long for you to reply to mine of 06/27/94!

In any case, I found your note of interest, as well as the details about the treatment of anthrax.

It is not that I believe that anthrax is the greatest threat, but it is among those about which we have to worry.

I do believe, however, that we ought to try to get our ducks and analyses in order, and that is why I am interested in any discrepancy between Matt Meselson's estimate of a few milligrams to a gram for the amount of aerosol source, and perhaps some earlier estimates. You indicate that you calculated about four kilograms, but that you assumed a source strength of about one percent. This would correspond to about 40 g of aerosol. I would like to push a little further, to understand whether you find any problems with the Meselson methodology, and to this end, I have spoken with Matt and I am now sending you by Express Mail from JASON the version of the paper which I have received.

I would really like you to look at this model and to see whether there are any problems with it. Perhaps there is an error someplace in the calculation, and I am sure that Matt would be most interested to know of any such.

In any case, I look forward to hearing from you.

Very best regards.

Sincerely yours,

Richard L. Garwin
Forwarded in his absence

RLG:jah:T180TD:062994..TD

GARWIN

OPERATOR: [REDACTED]
FAX: Attached to this
cover sheet are
3 pages.

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June 30, 1994
(Via FAX to 9 (617) 495-8308)

Dr. Matthew S. Meselson
Fairchild Biochemistry Building
Harvard University
7 Divinity Avenue
Cambridge, MA 02138

Dear Matt,

Thanks very much for talking with me again on Monday. Enclosed are the two letters I have sent Tom Dashiell; I will send you by FAX direct from La Jolla the reply I received from him after my first letter, and, again, when I receive a response to my more recent missive.

I really look forward to seeing you at the CISAC meeting in Woods Hole.

Very best regards.

Sincerely yours,

Richard L. Garwin jdc

Richard L. Garwin
Forwarded in his absence

Encl:

06/29/94 LTR RLG to T. Dashiell. (062994..TD)
06/27/94 LTR RLG to T. Dashiell. (062794..TD)

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