

September 6, 1963

Dr. R. E. Lapp
1315 Park Terrace Drive
Alexandria, Virginia

Dear Dr. Lapp:

Thank you for your letter and estimates which seem very reasonable to me on the basis of a crude estimate I made using a gazetteer of Soviet Cities and having been stimulated by your remarks. I think it might be fair to say that leaving out the bomber force we do not have at present an over-kill capacity in the popular sense. Nevertheless, I would think you would agree that we have an extremely powerful deterrent force. It must be especially important that the damage would be done in urban centers which certainly must represent the most valuable sector of Soviet society in the minds of Soviet leaders. I would think that even a considerably smaller force than the one we have at present would achieve this kind of deterrence.

With regard to our luncheon discussion of areas for cutting the military budget in addition to a cutoff on the production of fissionable materials, I would very much like to see some reduction in our expenditures for tactical and especially for intermediate range nuclear weapons such as the Sherman and TFX. I oppose any reliance on tactical and intermediate range nuclear weapons because of their inherent escalation qualities. Of course, budget cuts in these areas have powerful implications for our general nuclear strategy and would move us considerably closer to a no first use position. I think that a variety of developments including South American and African proposals for nuclear free zones are now working to make possible a reconsideration of our use policy for nuclear weapons.

I am enclosing a copy of the testimony I presented to the Fulbright Committee last week. The estimates for genetic damage from bomb testing are based on rather conservative assumptions and I do not consider them to be at variance with the larger numbers presented by Beadle to the Joint Committee last month or with the estimates of Pauling.

Sincerely,

Matthew Meselson

MM / JAS

Enclosure

1315 Park Terrace Dr.
Alexandria, Va.
22307

September 3, 1963

Dr. Matthew Meselson
Biological Laboratory
Harvard University
Cambridge, Mass.

Dear Dr. Meselson:

You may recall that in our ^{street} corner conversation with Marc Raskin I mentioned my estimates of the U.S. strategic retaliatory capability in 1968. Having been incapacitated for the past several days due to my unwelcome intrusion into a nest of yellow-jackets, I have had time to finish my estimates.

These are all based on an adjusted scale-up of Hiroshima data, modifying the survival curves for less flimsy city construction and using blast as the correlating parameter. I conclude that with a 1 megaton warhead fallout is not determining in fixing the height of burst and that optimized airbursts are employed. I assume an uprated Minuteman warhead of 1 megaton and an 80 per cent launch reliability with a 70 percent on-target accuracy.

Using 1961 urban data on the Soviet Union I find that our total missile force of 1840 carriers puts 88 million Russians at risk--essentially all towns over 15,000 population. I specify three target conditions (A) unalerted Hiroshima conditions tantamount to a first strike (B) soft-alerted situation, meaning a second strike but no extensive shelters and (C) a toughened situation with an alerted population in 1 atm. shelters. (A) seems quite improbable (B) most likely and (C) possible but not probable.

Mortality for (A) is 53 million, for (B) 40 million and for (C) 22 million. Casualties would be roughly 50 percent of mortality.

Larger warheads used as blast weapons would raise the mortality but I have assumed high yield Atlas-Titans are targeted at the largest cities and the Minuteman-Polaris saturated the smaller cities. The point here is that employment of Minuteman and Polaris involves an abandonment of fallout as a lethal effect and cuts down the number of Russians at risk. The Pugh-Everett analysis no longer applies.

I claim no great accuracy for the above estimates since I have no computer.

Sincerely,

R. E. Lapp

Ralph E. Lapp