

3 M-1387

~~CONFIDENTIAL~~

Confidential

Office of the Secretary of Defense
Chief, RDD, ESD, WHS

Date: 11 SEP 2014 Authority: EO 13526

Declassify: X Deny in Full: _____

Declassify in Part: _____

Reason: _____

MDR: 14 -M- 0517

MEMORANDUM

M-1387
July 1, 1949
-1-

To: Participants in STRAP Working Session, July 1949
From: STRAP Committee
Subject: STRAP

DECLASSIFIED IN FULL
Authority: EO 13526
Chief, Records & Declass Div, WHS
Date: SEP 11 2014

Listed below are some suggested topics which we would like investigated during the STRAP session. The list is not exhaustive, nor is the wording of any individual topic at all binding. One thing should be clear from the nature of the problems listed: we are more interested this summer in techniques and the development of principles than in answers per se. Frequently the "where" clarification of a question and an indication of what information is needed to approximate an answer will be a real step forward. We are particularly anxious to have your suggestions for specific research projects which RAND should carry forward after STRAP has ended.

1. Most analyses of strategic targets have been based on economic considerations. Wanted: A conceptual analysis of a society as a complex of possible target systems, with special reference to networks of communication, administration, political and social control systems.

2. How should one determine the optimum timing and "depth" of a bombing offensive (economic and tactical targets) on the alternative assumptions:

~~CONFIDENTIAL~~

14-M-0517

~~CONFIDENTIAL~~

1327
-2-

DECLASSIFIED IN FULL
Authority: EO 13526
Chief, Records & Declass Div, WPS
Date: SEP 11 2014

a. That the USSR overruns Europe in 1950. Our general strategy calls for a sea-borne invasion in 1953. The USSR has no A-Bombs. Assume that minimum destruction of the European economy is desired.

b. That the USSR is stopped on the Rhine in 1955, and a land front is maintained. The USSR has a small number of A-Bombs.

3. What are the moral and morale implications of the alternative possible strategies in both types of war situations outlined in 2-above (for U.S., Europe, and the Soviet Union)?

4. What military strategies, based on what military doctrines, would probably be followed by the Soviet Union? Under what conditions, for example, would the S.U. attempt to overrun Western Europe, or assume an immediate defensive posture?

5. Assuming the desirability of a "limited" war, what would be satisfactory peace terms which the U.S. could impose on the Soviet Union? Could the U.S. wage a "limited" war while possessing "unlimited" destructive potential?

6. Blackett's central argument is that the A-Bomb is simply a load of HE x 300; that one can therefore evaluate the effectiveness of strategic A-bombing by extrapolating the results of conventional bombing in World War II. Is this argument valid? Assuming equal areas of damage from A-Bombs and conventional bombs, how can one assess the probable economic consequences of the greater compression in time, the higher casualty rates, and the complete destruction associated with the A-Bomb damage?

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

M-1387

-3-

7. It is a straightforward calculation, assuming good intelligence information, to estimate probable physical destruction and therefore the initial loss of capacity and output in bombed industries. What methods can be used to predict the speed and form of recuperation as a function of the scale of bombing and its concentration industry-wise and in time?

8. What use can be made of linear programming or other economic models in evaluating the secondary consequences of the destruction of $x\%$ of various basic or intermediate industries? Toward the evaluation of what technical and economic coefficients should research be directed? (See D(L)-519)

9. The Navy OEG (Study No. 358) estimates that the Allied bombing offensive against Germany in fiscal 1945 cost at least 3.5 million man years of productive effort. This is contrasted with the USSBS estimate that the loss to the Germans at no time exceeded a rate of 5 million man years of less skilled and less productive labor. Required: a critical examination of the possible usefulness and the shortcomings of this type of accounting.

10. How can we evaluate the relative and absolute economic effects of A-Bombs dropped on:

- a. The industrial sectors of cities?
- b. The central commercial and residential sectors?

11. Possony (Chapter 7 of Strategic Air Power) outlines the "principles" of industrial target selection. Required: a

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

M-1387

-4-

more analytical and quantitative (or quantifiable) statement of these principles. How can one compare the total effect on the economy of complete crippling of one industry with partial crippling of several? Are the concepts of "bottle-neck," "cushion," and "depth" useful analytical tools?

12. Different bombing tactics require different ratios of bombs and bombers. It is therefore possible to derive the marginal rate of substitution between them on an indifference surface, and it should be possible, given appropriate cost data, to derive an optimum "balance" between bomb production and bomber production. Required: a precise formulation of the problem and a statement of the cost data needed to solve it. Take into account the following hypothetical complications: (a) decreasing costs in the aircraft industry: (b) constant prime costs in bomb production with large capital costs at discrete intervals. The problem must be treated dynamically; bombers become obsolete in, say, five years while bombs, according to Possony, last for so long a period that deterioration can be neglected.

13. How should economic values be assigned to U.S. targets and target areas to guide the allocation of our active defenses? (See D-367). Assuming that we can calculate the yield of defense expenditure in bombs prevented from reaching targets, how should we go about determining the most "economic" allocation of funds to active defenses?

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

M-1387
-5-

14. In 1944 the aggregate munitions production of the USSR was approximately 1/3 that of the U.S. (Goldsmith estimates 38%). What is the most reliable method of projecting the general and specific (e.g., aircraft) munitions production potential of "free" and of "planned" economies? (See D-530).

15. The industrial output of Europe (excluding U.K. and USSR) in 1948 was approximately $1\frac{1}{2}$ - 2 times that of the USSR. Assuming that the USSR overruns an unscorched Europe at the outset of a war (1950), to what extent can she use European resources to increase her munitions output by, say, 1953?

16. Assuming both a successful and an unsuccessful termination of the war, how can we assess the economic effects on the post-war world of strategic bombing policies designed:

- a. To destroy the 2 most populous Russian Cities?
- b. To destroy a few key Russian industries with only incidental damage to the cities in which they are located?

17. In an economy whose industrial sector is growing rapidly in accord with government pressure and policy, is it to be expected that lack of balance in the output of the basic commodities is likely to develop? How is it possible to recognize where the weak spots are or will be in the near future, and what are the implications for strategic bombing policy? Can a "new" economy like the USSR be expected to absorb more punishment than an "old" economy like the U.S.?

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

M-1387
-6-

18. What are the lessons to be learned from the bombing of transportation in World War II? How far could these lessons be applied to a possible war between the U.S. and the USSR? Under what circumstances is the bombing of transportation an effective substitute for bombing of industrial targets?

Required: a general theory of transportation bombing.

19. What lessons can we learn from World War II regarding the reliability of different methods of collecting and evaluating economic intelligence. What is the relation between the degree of reliability of (or confidence in) intelligence information and optimum strategic bombing policy?

20. What are the criteria for diverting a strategic air force to tactical targets?

21. Can one define a "critical" level of economic damage which would eliminate the capacity to resist?

rs

~~CONFIDENTIAL~~