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TRIPARTITE DISCUSSIONS ON STANDARDIZATION &  
STRATEGIC PROBLEMS - WASHINGTON, NOV. 1946

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MEMORANDUM TO: D.N.P.I.

TRIPARTITE DISCUSSIONS ON STANDARDIZATION AND  
STRATEGIC PROBLEMS - WASHINGTON, November, 1946

Annex I : Record of Meetings  
Annex II : Standardization  
Annex III : Agreed Papers on Strategic Developments  
Annex IV : United States Papers Tabled at Meetings  
Annex V : British Papers Tabled at Meetings.

Discussions were held in Washington from the 12th to the 25th November, 1946, between Joint Planning Groups of the U.S., U.K. and Canadian Services. The first meeting was held on the 12th November in the new War Department Building to discuss the agenda and procedure to be followed. The representatives of the three nations were:-

United States: Brigadier General Lincoln, Army  
Brigadier General Kissner, Army Air  
Captain Anderson, U.S.N.

United Kingdom: Rear Admiral Lambe, R.N.  
Brigadier General Richardson, Army  
Air Commodore Huddleston, R.A.F.

Canada : Brigadier General McGill, Army  
Air Commodore Dunlap, R.C.A.F.  
Commander Storrs, R.C.N.

Also present were Colonel Bonesteel, U.S. Army and Brigadier General Price of the British Joint Staff Mission. Rear Admiral Glover, U.S.N., who was to have acted as Chairman explained that he would only be able to attend intermittently and Brigadier General Lincoln was elected Chairman in his stead.

2. In considering the line to be followed in the discussions it was agreed that the details of the paper to be prepared on Standardization could best be handled by a sub-committee and that the main committee should concentrate upon what General Lincoln termed "a meeting of minds" on the general strategic background which indicated the desirability of achieving standardization.

3. It was decided that the "Standardizers" should consist of one Service member representing each nation, with such assistance from the other Services as he might require. The United Kingdom delegation had brought with them a "Standardizer" - Colonel Craigcraft, Colonel Wood represented the United States and Brigadier General Clark assisted by Group Captain Bradshaw and Lieut. Commander Groos represented Canada.

4. It was obvious that the achievement of absolutely identical equipment between the three nations was impractical and not necessarily desirable, but it was felt that the object would be virtually attained if a stage were reached where any one Service could use equipment of the same Service

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of another nation without extensive "conversion". However the use of common articles, particularly in the field of replaceables should be extended to a maximum.

5. Common procedures and doctrines, especially as regards unit designations and compositions were regarded as being of considerable importance and were felt to be the field where least difficulties would be encountered. In Communications it was considered that the achievement of common procedure was essential.

6. Discussions by the main body started on the 13th November. Beginning with an appreciation of probable developments in the world political situation, they developed through consideration of the effects of new weapons of war, examination of enemy and Allied Forces and raw materials likely to be available, to a consideration of probable Soviet and Allied strategy.

7. There were few major divergencies of opinion between the United States and the United Kingdom and the majority of these were greatly narrowed during the course of the talks. The greatest difficulty was, of course, the bombing menace of the North American continent. While it was agreed that it was most unlikely to reach the proportions envisaged by the Sub-Committee on Air Interceptor and Air Warning, the United Kingdom and United States delegations quite naturally had somewhat different views on the scale of attack that might be probable. The problem was not allowed to create an impasse and it was resolved with complete accord by accepting the premise that securing of the potential of North America was of the first priority.

8. The talks throughout were on a broad and comprehensive plane and Naval aspects were not considered in great detail. However, the vital importance of the lines of communications of the three areas of greatest strategic importance - Middle East, United Kingdom, North West India - was stressed again and again. The menace of the modern submarine was emphasized and it was accepted that Russia would concentrate her Naval effort upon this arm and might well have a fleet of 500 boats by 1956. The United Kingdom delegation dwelt at some length upon this problem and gave Admiralty's estimates of escort forces required as:-

- 10 Atlantic Groups
- 6 Mediterranean Groups
- 4 Freetown Area Groups
- 5 Independent Groups
- 50 ships for coastal convoys

total, at 8 ships per group, 250 ships. They also considered that they were seriously short of escort carriers and reported that they were considering converting their 8" cruisers and had already prepared and filed conversion plans for suitable 16 to 20 knot cargo ships.

9. Resulting from the meetings were 3 agreed papers:

- (a) United States - United Kingdom - Canadian Standardization.
- (b) Estimate of factors affecting the outbreak of war and time available for preparation.
- (c) Strategic guidance for long range planning.



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10. It was agreed that each standardization paper should be presented separately by each group to its Chiefs of Staff and that the recommendations should not be implemented until the Chiefs of Staff of all three nations had indicated their approval. The paper was produced in 2 parts and it was agreed that the first part concerning considerations bearing on the problem should receive the same "Top Secret", limited distribution, classification as the other papers, whereas the second part dealing with actual standardization could be down graded to "Secret" after approval by the Chiefs of Staff and eventually to a lower classification.

11. It was suggested that each delegation might, if they wished, present the paper entitled "An Estimate of Factors Affecting Outbreak of War" to its Chiefs of Staff who might then pass the paper to their governments as an expression of co-ordinated military views.

12. The third paper should not be passed to the corporate Chiefs of Staff but should - as its title implies - be regarded as a presentation of generally agreed opinions on strategy for the information of planners.

*A.H.G. Storrs*  
(A.H.G. Storrs),  
Commander, R.C.N.  
D/D.N.P.

Ottawa,  
7th December, 1946.

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SECOND DRAFT

SOVIET STRATEGIC POLICY

PART I REVIEW

HIGHER SOVIET AIMS

Soviet aims in relation to the rest of the world may be summarised as follows:-

- (a) To achieve the full establishment of communism in the U.S.S.R. This includes security from outside attack and the establishment of economic self-sufficiency within the Soviet sphere of control.
- (b) To foster the spread of communism throughout the world. Only full achievement of this aim can, in Soviet eyes, provide the international political party which will prevent future wars.

FACTORS AFFECTING THE ATTAINMENT OF THESE AIMS

Political

2. Russia has been invaded times in the last 150 years. So long as this possibility continues to exist the full establishment of communism in the U.S.S.R. must be delayed, and even its survival is jeopardised.
3. The communist teaching claims that, in the national or international spheres the control of the means of production cannot be transferred to complete public ownership without a fight by the powerful private interests who have hitherto been the owners. The spread of communism is therefore bound to involve a clash initiated by the capitalist states rather than to allow their economies to be undermined irretrievably. The danger of Anglo-American attack will therefore tend to increase in the Soviet eyes as the communist influence tends to undermine the Western Democracies. The Western Democracies, however, must await an issue which can be successfully represented as vital to their peoples before they can be stirred to fight.
4. Although both the American form of Democratic Government and the British form of Social Democracy are based on capitalism, the latter, if shewn to be successful in the United Kingdom, may gain considerable support in Western Europe as an alternative to Russian Communism.
5. The power of communist political propaganda which lies in Soviet hands, however, cannot easily be matched by the Western Democracies. Their control over public opinion is nothing like so complete as that of the U.S.S.R. while belief in their own ways of life will be frequently undermined by the contradictions inherent in their capitalist economies. For these reasons the belief in communism will tend to spread, if not in Western Europe, then in many other parts of the world during the next ten years.

6. There is little doubt that a truly international form of communism (as opposed to the present Russian national form) would appeal to a considerably wider circle. This fact, even if appreciated by her, is, however, likely to be ignored by the U.S.S.R. who will continue to demand from foreign communists implicit obedience to the Soviet party line.

Economic

7. The Soviet sphere of influence including satellites is already economically self-sufficient with the following exceptions:-

- (a) Oil. Soviet production is unlikely, during the next few years to exceed the pre-war figure of 32 mn. tons per annum. Even given the development of new fields within this period, the Soviet oil supply is insufficient for a major war of long duration. The rapid development of atomic energy is thus of great importance and will be pressed on with at high priority.
- (b) The Soviet has no source of natural rubber available. This deficiency can be offset by synthetic plants.
- (c) Adequate transportation facilities are vital to an efficient war effort, particularly if that effort is dispersed, as in the Soviet Union, over wide areas. Although the lavish use of man-power can be used to offset this to some extent, considerable expansion of the transport system is necessary if the war economy of the country is to approach a capacity comparable to that of Western Europe or the United States.

8. Though widely dispersed in comparison with Western Europe, the industrial strength of the country is concentrated in cities, of which are within 1,500 miles radius of the United Kingdom, the Middle East or North West India. While the separation of these targets gives a considerable measure of dispersal the problem of defence from air attack is correspondingly magnified.

Strategic

9. Military. On a basis of numbers of fit men available for mobilisation, by 1956, the Soviet Union should equal or slightly exceed the combined figure of U.S.A. and the British Commonwealth. Mobilisation will, however, be much more rapid in the U.S.S.R. The re-equipment of Soviet divisions to Anglo-American standards is likely to take at least five years.



10. In 1951 and 1956, the U.S.S.R. is unlikely to possess more than 50 and 400 atomic bombs respectively. Comparable figures for the Anglo-Americans are 500 and 1500 respectively. On the earlier date, the Soviet may thus possess sufficient bombs for decisive results against the United Kingdom, whilst the Anglo-American numbers are still insufficient for similar results against the U.S.S.R. On the later date, however, there is less disparity between the totals available.

11. In Biological Warfare, the U.S.S.R. can probably match the Anglo-Americans at any date.

12. The Soviet Union requires several years to build up and train a Strategic Air Force in any way comparable to that of the Anglo-Americans in World War II.

13. On the above grounds, any Soviet strategy should aim to exploit her early superiority in land forces, and her numerical superiority in the air whilst, if possible, hamstringing the Anglo-American effort in those weapons in which they hold a technical superiority.

14. Geographical. The Soviet defensive ring at present shows three main gaps, namely, the Middle East, Germany and North China. In these areas Anglo-American interests butt directly against those of the Soviet Union and with the addition of air action from North West India, these three areas represent the most probable lines of attack.

#### Secrecy

15. The secrecy which can be preserved by the Soviet Union in matters of strategy and war potential is a weapon of prime importance. No infringement of the security given to Russia by this factor can be tolerated by her.

16. Soviet intelligence on Anglo-American military matters is adequate.

#### ANGLO-AMERICAN SITUATION

17. The Soviet appreciation of the Anglo-American position is probably as follows:-

18. The power of Britain is declining and without strong provocation and American support she is unlikely to oppose by force Russian long term plans in Europe. American interest in this area and hence support for Britain is likely to diminish.

19. Britain can no longer rely on the unquestioned support of the Dominions, while the growth of nationalism in the Far and Middle East is adversely affecting Britain's present position in those areas.

20. American economic requirements will demand expanding overseas markets, particularly China, the Far and Middle East. Growing labour difficulties in the United States will afford good ground for propaganda in the spreading of communism. In the years to come, active American support for Britain will tend to become more and more confined to those areas in which American interests are directly threatened.

## METHOD OF ACHIEVING THE SOVIET OBJECT

### Without War

21. The foregoing arguments point clearly to the possibility of achieving a considerable measure of the Soviet Higher Aim without war.

22. By delaying the economic recovery and postponing any political stabilisation in as many independent European countries as possible, conditions for the spread of Soviet influence in this area can be prolonged. By giving all possible support to pro-Communist parties, a considerable measure of Soviet control may be achieved in such countries as France, Germany, Italy, Greece and Iran.

23. By adopting "Azerbaijan technique" wherever possible, and by avoiding any direct threat to American interests, it will be very difficult for the Western Powers to intervene against the apparent will of a large part of the people of the countries concerned.

24. This policy, while presenting great advantages over direct military expansion, is unlikely to succeed in the United Kingdom, Norway, Sweden, Denmark or Turkey.

25. Considerable risk is also entailed and such action must therefore be supported by an economy and by military forces at a high state of preparedness for war.

### By War

26. If it is decided, however, that the realisation of Soviet Aims is unlikely to be achieved without war then the following courses are open to the U.S.S.R.:-

- (a) To attack first and soon.
- (b) To delay war as long as possible and to await a declaration of war by the Anglo-American powers.
- (c) To delay war until it is clear that the Western democracies intend to fight and then to attack first.

These courses are examined below.

### To attack first and soon

27. Advantages of this course are:-

- (a) The Western Democracies are war weary and resistance may be weak.
- (b) The period throughout which Soviet Armed Forces must be retained at great strength and efficiency is reduced.
- (c) The initiative will be seized.
- (d) Anglo-American stocks of atom bombs are unlikely to be sufficient to be decisive.

28. The disadvantages are:-

- (a) The Soviet economy requires as long as possible to recover from World War II.
- (b) The scientific lead of the democracies has not been reduced particularly by the exploitation of German scientists.
- (c) The Soviet defensive ring is incomplete and time is required for its development.
- (d) The fifth Column requires time to develop everywhere.

To delay war until attacked.

29. Advantages and disadvantages are the reverse of the above.

To delay war until the last moment.

30. In addition to the fact that this course gives the greatest possibility of achievement by political means, advantages over the other courses are:-

- (a) War by itself does not necessarily further Soviet aims. It might conceivably be avoided by this course.
- (b) The maximum possible time is allowed for consolidation and development both inside and outside the U.S.S.R.
- (c) The maximum time is given in which to disrupt the good wartime relations established between the United States of America and Britain and to split the external world into separate entities.
- (d) The world can be shown that war has been forced upon the Soviet.

31. There appears to be no disadvantages by comparison with the other possible courses.

#### SOVIET COURSE OF ACTION

32. It therefore seems probable that the Soviet Union will adopt the following action in the order shown:-

- (a) Consolidate economically and politically.
- (b) Extend her influence in every way possible.
- (c) Split the United States of America and Great Britain by not threatening American interests where this can possibly be avoided.
- (d) Encourage the seizure of power by pro-Communist Governments, in Western European and Middle East States particularly.
- (e) Accept "invitation" to help restore order in States so affected.

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33. If this policy is successful, a declaration of war by Great Britain without the certainty of early and active support from the United States of America, is very unlikely.

34. If, however, the above policy leads to a position in which it appears that:-

(a) Further encroachment will be resisted by force, and

(b) The attempt to divide the Anglo-American democracies has failed;

the Soviet Union must be prepared to attack in Europe and the Middle East as soon as the Anglo-American Powers can be represented to the outside world as committed to war.

35. In this event, the objects of Soviet Strategy would be:-

(a) To delay by every means in her power, the entry of the United States of America into the struggle. All possible steps will be taken to confuse American public opinion as to where their interests lie.

(b) To prevent an Anglo-American come-back via the British Isles by eliminating Britain from the contest as soon as possible. This would also postpone any substantial air threat from the Middle East and India, until the Americans were in a position to mount it.

## PART II - OUTLINE SOVIET STRATEGY

36. From the foregoing Review, it will be seen that Russian Strategy is likely to develop in the following phases:-

Phase I. A period of consolidation, physical and political leading to expansion by means of political pressure and subversion.

We estimate that this phase will last for at least five years and, very possibly, for ten, but its duration must necessarily depend primarily upon:-

- (a) The success which attends it.
- (b) The Anglo-American reaction to such success.

Believing that this policy must eventually lead to a clash with the Western Democracies, Russia must prepare for war during the period. Her degree of readiness will tend to increase in proportion to the success achieved and to the violence of Anglo-American reactions.

37. If and when the Anglo-American Powers can be represented to the World as committed to War, the Soviet Union is likely to seize the initiative and direct her strategy towards:-

Phase II. The conquest of Europe and the Middle East, including the neutralisation and capitulation of the United Kingdom.

Phase III. The offensive against the U.S.A.

### Action in Phase I

38. The sequence of events is likely to be as follows:-

- (i) Consolidate the hold over Satellites and Eastern Germany.
- (ii) Delay conclusion of European Peace Treaties so as to obstruct the recovery of Western Europe.
- (iii) Strengthen Soviet influence in Persia and encourage unrest in Palestine and Turkey.
- (iv) Obstruct the establishment of a Western European Bloc.
- (v) Spread the Communist doctrine by every possible means.

1st Priority - Europe, particularly Italy, France, Spain and Greece.  
The Middle East.

2nd Priority - China  
India and Afghanistan  
The Far East.

- . (vi) Build-up a Fifth Column throughout the world, including the United Kingdom, Western Germany and the Americas.

39. Throughout this period, the military and economic strength and the communications of Russia will be improved; deficient raw materials will be accumulated.

Action in Phase II

40. This phase is divided into two parts.

41. Phase IIA (i) Destroy U.S., U.K. and French occupation forces in Europe.

(ii) Over-run and occupy Western Europe, excluding Spain and Scandinavia except possibly Northern Norway.

Forces required - Army  
Air  
Navy

(iii) Commence U-boat offensive against U.K.  
Forces required - Navy

(iv) Occupy Spitzbergen with small forces.

(v) Occupy Persia and Iraq.

Forces required - Army  
Air

(vi) Occupy Greece.

Forces required - Army  
Air

(vii) Invade Turkey from the East and over-run Thrace.

Forces required - Army  
Air

(viii) Threaten India - to tie up forces.

(ix) Defend Eastern U.S.S.R. and Threaten China - to tie up forces.

Forces required - Army  
Air  
Navy

(x) Defend the U.S.S.R. against air attack.

Forces required - Army  
Air

Total Forces required - Army  
Air  
Navy.



42. On the assumption that all the above tasks are initiated simultaneously, this part of Phase II with the exception of eliminating Turkey, might be completed in weeks.

The conquest of Turkey will, however, require weeks in all.

43. Phase IIB (i) Commence bombardment of the United Kingdom (See Annex)  
The necessary air bases and launching sites could be prepared weeks after the over-running of Europe. Scale of attack at start will probably be comparable to that of the Germans in 1940 but further examination of this problem is in hand.

Forces required - Air Day  
Night  
Atomic Bombs  
Rockets.

(ii) Intensification of U-boat offensive from European bases.

Forces required - Navy U-boats.

(iii) Offensive against Syria and Palestine from Iraq.

Forces required - Army  
Air

(iv) Offensive against Syria and Palestine from Turkey.

Forces required - Army  
Air

(v) Occupation of Europe, less Spain, Scandinavia and Switzerland.

Forces required - Army.

44. The next move would be dependent upon the outcome of this Phase, particularly upon the progress of operations against the United Kingdom and the scale of reinforcement provided to this and the Middle East theatres by the U.S.A.

45. If widespread success is achieved, the U.S.S.R. would probably try to obtain acceptance of terms covering the domination of Europe in order to obtain a breathing space.

46. If resistance stiffens and continues in the U.K. and Middle East, consideration will be given to an attack on Spain - the occupation of Northern India to deny air bases and of North and North West Africa may also be attempted.

Phase III

Attack of United States

47. Apart from sporadic air and rocket attacks against the mainland, and the continued attack of U.S. shipping, no immediate offensive against the U.S. or the Americas at large, is envisaged, without a long period of consolidation in Eurasia and the absorption of Scandinavia.

During this period every effort will be made to extend Russian influence and to foment discontent in India, Far East and China.

ANNEX

NOTE ON THE SCOPE AND TIMING OF  
UNITED KINGDOM BOMBARDMENT

1. In deciding to initiate the bombardment of the United Kingdom, the Soviet must decide

- (a) whether or not to initiate the use of weapons of mass destruction, and
- (b) whether to start simultaneously with the opening of the land campaign in Europe or to await the establishment of advanced bases.

The Scope of the Bombardment

2. On the assumption that weapons of mass destruction (e.g. Atomic, Biological and Gas Warfare) are not used first by the Allies, the Soviet are likely to weigh the following arguments in deciding whether or not to initiate their use:-

Advantage:

The United Kingdom may be knocked out of the war quickly. In this event, any come-back from the U.S.A. will take a long time to develop.

Disadvantages:

- (i) Anglo-American stocks of atomic weapons are likely considerably to exceed Soviet stocks.
- (ii) The Soviet cannot be certain that the original Anglo-American technical lead in weapons of this nature has been overtaken.
- (iii) It is only in the Middle East that prolonged fighting need be anticipated in Phase II. Sufficient forces are therefore available for the deliberate reduction of the United Kingdom by the intensive use of orthodox weapons, including H.E. rockets.
- (iv) The Soviet, who have always posed as the champions of the common man, will be forever branded as having released this form of attack upon the world again.

They will, however, argue that it was the U.S.A. who first let loose this destruction at Hiroshima.

- (v) Conversely, by not using mass weapons, the Soviet may calculate on United Kingdom intervention to restrain the U.S.A. from initiating their use, for fear of Soviet retaliation against the vulnerable British Isles. This might cause a rift between the Allies.

3. On balance, therefore, we think that the initiation of this form of warfare will be left to the Anglo-Americans, so long as the ultimate reduction of the British Isles appears possible to the Soviet by orthodox means.

The Timing of the Bombardment.

4. In deciding when to start the bombardment of the United Kingdom, the Soviet have two broad alternatives:-

Course A - To begin simultaneously with the land offensive in Europe by using existing bases.

Course B - To wait until advanced bases have been acquired.

5. Course A.

Advantages:

- (i) It will impede mobilisation.
- (ii) Achieve some measure of success before defences can be fully organised, at possibly a lower loss rate.
- (iii) May knock United Kingdom out of war earlier.

Disadvantages:

- (i) Scale of attack will be reduced by distance to be flown.
- (ii) British defensive organisation would be able to make use of advanced warning stations in Europe.
- (iii) Rocket offensive will be limited in scale and accuracy owing to range.
- (iv) The Soviet lacks experience in the operation of a long range Strategic Air Force.

6. Course B.

Advantages:

- (i) Delay will be only of short duration.
- (ii) British will be denied forward radar.
- (iii) Scale of attack will be intensified by both air and rocket.
- (iv) Short and long range aircraft can be used for the attack.
- (v) British reaction to Russian moves in Europe can be assessed, and opportunity allowed for the greatest development of anti-war propaganda by Communist sympathisers in the United Kingdom.

Disadvantages:

- (i) If progress of campaign in Europe is slow and bombardment is delayed, Britain can go ahead with war preparation without interference.
- (ii) Lose advantage of surprise attack.
- (iii) May pass air offensive initiative to United Kingdom.

7. If the land offensive goes as fast as anticipated, the delay in waiting for better bases will be short, and Britain can do little in the way of improving her position during that period.

8. Moreover, by attacking in very great strength with aircraft and rocket, the effect on the civil population will be far greater than a relatively light effort spread over a period of days, particularly if it is decided to use the small number of atomic weapons likely to be available.

9. It is unlikely Britain would launch a strategic offensive against Russia before she herself was attacked, and freedom from interference in Russia and Eastern Europe is desirable during initial drive across Europe.

10. On balance, therefore, it is considered advantageous for Russia to delay opening her bombardment of the United Kingdom until she has secured a position from which she can attack with something approaching maximum effort.

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SITUATION IN 1956 IN RESPECT OF THE DEVELOPMENT  
OF NEW WEAPONS AND ITS EFFECT ON WAR

INTRODUCTION

1. The probable future trend in technical developments has been assessed in T.W.C.(46) 15, the conclusions of which have been accepted by the British Chiefs of Staff.
2. In our paper we endeavour to relate those conclusions to the specific case of a war in 1956 between the U.S.S.R. on the one hand and the United States and British Commonwealth on the other. The year 1956 has been selected in accordance with the basic assumptions governing the whole of our examination. The balance of advantage in weapons, however, is a factor which will vary from year to year, and in regard to some weapons, the enemy may be less disadvantageously placed in years intervening before 1956; where these cases are significant we have drawn attention to them.
3. Our paper is divided into three parts:-
  - Part I      Relative situation in weapon development in the U.S.S.R., United Kingdom and United States in 1956.
  - Part II     The effect of these weapons on a war in 1956.
  - Part III    Defence preparations required to be taken in peacetime to meet the situation.

PART I

RELATIVE SITUATION IN WEAPON DEVELOPMENT FOR OFFENSIVE PURPOSES: U.S.S.R., UNITED KINGDOM, UNITED STATES OF AMERICA

Atomic Missiles

4. By 1956 all three Powers should be in possession of stocks of atomic missiles, although in the case of the U.S.S.R. there is some doubt whether they will have solved the technological problems of atomic energy by that date. We consider, however, that we should plan on the assumption that they have been successful.
5. It has been tentatively estimated<sup>+</sup> that stocks of bombs in the U.S.S.R. will not exceed the following figures:-

50	not before 1952	*
150	" "	1954
400	600	" 1957

*unless new sources of high-grade ore are discovered.*

+ J.I.C.(45) 320 (0) and J.I.C.(45) 52 (0)

\* These figures are under further examination and may require amendment.



Taking into account the recent leakage of information concerning atomic energy it is possible that the Soviet's estimate of American and British production is fairly accurate, and that she credits them jointly with the following:-

300	before	1950
700	"	1952
1,100	"	1954
1,750	"	1957

Thus her adverse balance in 1957 might be estimated as 1,350 bombs.

6. The question has been examined<sup>4</sup> whether by dropping a sufficient number of atomic bombs on the civilian population, it would be possible to win a war without defeating the enemy's armed forces. To do this, the will to resist of those controlling the armed forces must be broken. It would therefore be necessary:-

- (a) to cause sufficient destruction and casualties, with the expectation of more to follow, to cause the population to desire to capitulate;
- (b) that this desire should be enforced on the armed forces.

7. The number of bombs required to be delivered on target to satisfy (a) depends on the civil defence preparations made before the attack and, in particular the degree to which it is possible to get people out of the larger towns and keep them out. How far this would be possible depends on the percentage of the population living in the towns and the rapidity with which the attacks could be delivered. In both these respects we are in a much worse position than the U.S.S.R. Finally, the will to resist will be much stronger if there is hope of ultimate victory. In a democratic country (b) is fulfilled, but in an authoritarian country the population may be unable to make themselves heard. Taking these factors into account, it appears that the number of bombs required on target to produce collapse in this country might be between 30 and 120 with the prospect of more to follow.

In the case of the U.S.S.R. the prospect of ultimate victory might well seem high to them, and we believe that collapse if it occurred, would require the rapid delivery of several hundred bombs on target. If these bombs could not be delivered rapidly, that is before the large towns had been evacuated, it might not be possible to cause collapse by any reasonable number of bombs. However,

<sup>4</sup> TWC(46) 15 Revise

the ultimate ability to wage war might be so reduced that the country could be defeated if engaged by a well-equipped and well supplied army.

In the case of the United States, we should expect the number of bombs required on target to be much greater.

8. A large number of factors must be considered before it is possible to arrive at even a rough estimate of the number of atomic bombs which the Soviet Union would need to possess, before being in a position to deliver 30 - 120 bombs accurately in the United Kingdom. These factors include the accuracy and the vulnerability of the vehicle of delivery, the range, the size and density of the selected target areas, and the efficiency of passive and active counter-measures. On balance, we consider it reasonable to estimate that the Soviet Union would not feel ready to deliver an attack on the United Kingdom, which might be expected to cause collapse, until she possessed about 400 atomic bombs (1957) *until considerably*. Similarly, the Soviet Leaders might consider that, until the Western Powers possessed about 700 atomic bombs (1952), the latter would not be in a position to cause collapse in the U.S.S.R.

9. The most important known supplies of uranium ore lie in Belgian Congo, Canada, South Africa, Portugal, U.S.A., Sweden, U.S.S.R., Czechoslovakia and Bulgaria. Of these known sources, the major ones are in areas which the Allies can expect to control; ~~but it seems likely that there will be sufficient raw material in the U.S.S.R. or the territory of her allies to ensure that her development of atomic weapons will not be hindered by lack of raw material.~~

*unless supplies of high grade ore are discovered production seems likely to be hindered by lack of raw materials.*

### Biological Warfare

10. Biological warfare has not yet been tried out against man, but if expectations are confirmed it will be comparable in efficiency to the atomic bomb as a weapon for inflicting casualties against human beings in important populated areas. With the present rudimentary bomb, one aircraft carrying fifteen 500 lb. bombs would affect everyone in the streets in a built-up area of  $\frac{1}{2}$  square mile. There is a prospect in the reasonably near future of one 1,000 lb. rendering 3 square miles of a city lethal to all those out of doors at the time. This plainly brings it into the same category as the atomic bomb.
11. In a period beginning say about 1951, biological warfare used as a most dangerous form of gas could become almost unimaginably powerful. Various means of defence are available and will improve; they will have the effect progressively of minimising casualties, and increasing the survival rate, but the time when complete protection can be assured is far away. Meanwhile, and probably always, the organisation needed to make use of the best protection known at any time will present a very serious problem.
12. Little is known of the development of biological warfare in the U.S.S.R. except that the subject is evidently given high priority. The results of German and Japanese research are in large part available to them and we can only assume that by 1956, and probably at an earlier date, plants for the production of B.W. agents will have been established in the U.S.S.R.
13. It is understood that a plant already exists in the United States; it is the intention in the United Kingdom to construct a pilot plant as a first step.
14. Production of the materials necessary for biological warfare will be a much easier problem for the U.S.S.R. than the production of atomic energy. On the other hand, in comparison to the United Kingdom and United States of America, the U.S.S.R. would be handicapped in defence against this weapon by less highly developed communications, a less efficient system of telecommunications, and lower overall standards of medical organisation. Should the U.S.S.R. in the next 5-7 years be able to develop biological warfare to a degree which would give her a substantial lead over the United States of America and the British Commonwealth, she might consider that a war, say in 1952, with the advantages which her biological warfare weapons would give her and the disadvantage of an adverse balance of say, 250 atomic bombs would be preferable to a war in 1956 when the atomic bomb situation for her would be much worse. As an offensive weapon, for use against the U.S.S.R., with her more dispersed population, biological warfare, if expectations are confirmed, might be more effective than the atomic bomb, provided our own defence measures were well advanced.

### Gas Warfare

15. We must expect that the new gases such as those discovered by the Germans in the last war, and possibly others, will be available for use by all three Powers. These gases are very much more toxic than previous types but the respirator is effective against them. Methods of detection are under consideration and it is expected that by 1956 development will at least have reached the prototype stage. Until this has been achieved they must be regarded as dangerous weapons which, in view of Russian interest in their development, might well be used.

### METHODS OF DELIVERY

#### Very heavy bombers

16. We consider that for ranges of over 400 miles, manned aircraft will still remain the only practical means of delivering atomic and biological weapons with sufficient accuracy. All three Powers should, by 1956, be in possession of V.H.Bs. operating at high subsonic speeds. It is unlikely that supersonic pilotless bomber aircraft will be available by that date. The United Kingdom and the United States of America should have a marked lead in the efficiency of their aircraft and in operational technique.

#### Rockets

17. We can expect that the U.S.S.R. will have long-range rockets available for strategic bombardment, but we consider it improbable that the standards of accuracy at ranges up to a few hundred miles would be such that atomic missiles could satisfactorily be used. Below 400 miles range sufficient accuracy for area targets should be practicable; it is therefore possible that the U.S.S.R. would use rockets for delivering biological warfare agents and certainly for H.E. For greater ranges, rocket bombardment with H.E. or B.W. agents might be used as a harassing weapon.

18. We should expect rocket development in the United States of America to be ahead of the U.S.S.R., but the fundamental problem of control to give sufficient accuracy at long-range may still not be solved. In the United Kingdom, medium and long range rocket development may well fall short of that in the U.S.S.R., owing to the smaller resources available and the priority which must necessarily be given to guided anti-aircraft projectiles for defensive rather than offensive purposes.

19. The development of tactical rockets will have progressed, but the results will not affect our strategy to any significant extent.

### MEANS OF DEFENCE

20. By 1956 progress in defensive weapons may not have kept pace with the development of the offensive. Although high priority in military research effort is being devoted in the United Kingdom to the production of a G.A.P. and supersonic fighter aircraft, methods of defence against

V.H.Bs. may not be sufficient to deter the enemy. Should it be possible with G.A.P. and other developments to inflict a loss rate of the order of 50%, we could not rely on this necessarily deterring a ruthless enemy with vast man-power resources from continuing the attacks for the limited period which would be sufficient to achieve decisive results. Some atomic bombs and, maybe, a critical number will therefore reach their mark in the United Kingdom in spite of developments in G.A.P. and supersonic fighters and of advances in radar which are a prerequisite for the efficient application of all these weapons.

Apart from direct attack against launching sites, which is necessarily a highly inefficient form of defence, the only answer to the rocket that can be foreseen at present is the possibility of deflecting it from its target by means of radio counter-measures, if it is radio controlled. The possibility of destroying or deflecting it by A/A fire is also slender. A heavy scale of bombardment of the United Kingdom with H.B. accompanied possibly by B.W. agents must therefore be expected.

21. Independent of the development of G.A.P., improved conventional guns will still be required but primarily as a means of defence at ranges below the minimum operational range of G.A.P. against attack by aircraft or guided projectiles, or in circumstances where G.A.P. cannot be fitted.

#### NAVAL DEVELOPMENTS

22. By 1956, the U.S.S.R. to whom German expert advice is available, could have in service a considerable number of "true submarines" capable of high speed and great endurance under water. These may be produced in great secrecy.

23. If resolutely operated, these submarines will be a deadly menace to our convoys and a most serious threat to our fleet until we have:-

- (a) Developed a means of detecting submerged submarines from the air.
- (b) Greatly improved the means of detection from surface ships.
- (c) Developed new airborne and seaborne anti-submarine weapons.
- (d) Developed a means of destroying torpedoes before they reach their target.
- (e) Provided escort vessels possibly themselves submersible capable of speeds in excess of these submarines.

24. No direct solution of (a) or (b) is in sight, though detection in limited areas may be possible; (d) is a very long way off. The weapons (c) are being developed but to fulfil (e) some 150-200 escort vessels of new design must be built.

25. Immune to sweeping as it exists today the ground mine will be a very serious menace if used in coastal waters in large numbers. This is available to the Russians now and we cannot rely upon counter measures being available by 1956.

26. The effective use of the atom bombs from a carrier is at present excluded by its weight. There are, however, indications that the bomb may come down in weight from 10,000 lbs. to 7,000 lbs. If this occurs, it should be possible to design a special strike aircraft to lift the load, but the present limitation of 30,000 lbs. overall weight of naval aircraft would preclude any very great strike radius.

27. By 1956 the first G.A.P. fitted ships may possibly be at sea. The G.A.P. fitted with proximity fuse and homing device, should eventually greatly increase the defensive power of the fleet against aircraft flying at subsonic speeds. Improved A/A guns will be necessary for close range defence against Guided Projectiles and Aircraft attack.

The means of protection afforded against supersonic aircraft or missiles can only be guesswork at the present time, but we are optimistic in these respects.

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## PART II

### THE EFFECT OF THE NEW WEAPONS ON A WAR IN 1956

#### IMPLICATIONS OF NEW WEAPONS

28. The main implications of the new weapons available in 1956 may be summarized as follows:-

- (a) The possibility exists of achieving rapid and decisive results by the use of mass destruction weapons against concentrated industry and the civil population.
- (b) In the use of long range mass destruction weapons, the offence by comparison with the defence has a marked superiority which we cannot foresee being reduced appreciably in the next ten years.
- (c) An enemy will be able to launch greatly increased striking power from a very great distance and with less preparation than in the past.
- (d) The potential threat to our sea communications will be much greater than at any time in the last war.

## THE PROBABLE NATURE OF A FUTURE OF WAR

29. In future wars the two methods of waging war will remain, as in the past:-

- (A) the direct attack on the enemy's national economy;
- (B) the destruction of his armed forces.

In the past, method (A) could not be decisive in itself, but in the future under certain circumstances it may well be decisive in a comparatively short period. The United Kingdom, owing to its highly industrialised and congested lay-out, is an ideal target for atomic warfare; moreover its close proximity, in terms of the ranges of modern weapons, to potential enemy bases on the Continent facilitates the profitable employment of rocket weapons.

30. With regard to the degree in which the two methods will be employed and the order in which they may be used, we consider speculation to be dangerous. An enemy who possessed great superiority for waging war by method (B) and who had by political subversion confused world opinion and prepared the way for aggression might hesitate to initiate method (A) if there was a chance that all his immediate objects could speedily be achieved by (B) alone. Should substantial stocks of atomic bombs be available to both sides and should the means of defence against them be as ineffective as it is now, we can foresee circumstances in which there might be great reluctance to initiate atomic warfare.

31. We can predict no further therefore than to say that the two methods of waging war will both be available; they may not both be used, but we must be prepared for their employment simultaneously or consecutively in either order, depending on relative potentialities for each method, the effect of reprisals, and political and geographical factors.

32. In the event of war in 1956 between the U.S.S.R. and the Allies, we think it possible that the U.S.S.R. might delay the initiation of either atomic or biological warfare. Should she have been able to soften the Western European powers by communist infiltration, and should world opinion (and particularly American opinion) be strongly mobilised against the use of mass destruction weapons, the U.S.S.R. might, as a first and ostensibly "last" step occupy the Low Countries and France at the "invitation" of Communist groups in those countries, thus exploiting her vast superiority in land forces while there was a chance that the technical superiority of the Allies would not be brought into play against her. The Allied Governments would then be faced with a difficult choice. A "conventional" offensive against Russia would be slow, costly and uncertain; the powerful factors of vast space and teeming man-power, which have so often saved her in the past, might well do so again. Yet, to seek a quicker decision by initiating the use of the new weapons might entail for the United Kingdom the loss of a large part of her population and the destruction of her economy for generations.

33. Taking into account the comparative states of military preparedness in peace which the U.S.S.R. and the Allies may be expected to maintain during the next ten years, and the superiority of the means of offence over defence, we consider the worst case for which we must prepare is the use by the U.S.S.R. at the outset of both methods (A) and (B) including the employment of mass destruction weapons. This forms the basis of our subsequent examination.

#### STRATEGIC DEDUCTIONS ARISING FROM THE NEW WEAPONS

##### Time Factor

34. Our ability to win the "last battle" can no longer be regarded as a valid defence, since the first battle may be the last. To cope with the new danger of a very powerful onslaught delivered with little warning or as a complete surprise, we must arrange for greater preparedness in peacetime, more rapid mobilisation and a higher initial concentration of force at vital points.

##### Retaliatory Action

35. The enemy's belief in our ability to retaliate will be a deterrent. Although defensive effort should be our major commitment a certain minimum concentration of effort on offensive weapons will therefore still be required, and this should, if possible, be closely linked with the greater offensive capacity of our allies. Forces for this must be maintained at a high state of readiness in peace; in considering to what extent forward bases can be developed in peace, the strategical advantages will have to be balanced against the political disadvantages of any action that could be interpreted as provocative or contrary to the principles of the United Nations.

##### War Production in the United Kingdom

36. The use of the United Kingdom as a centre of war production is gravely threatened by the effect of the new weapons owing to:-

- (a) excessive concentrations of industry and population;
- (b) our dependence on imports;
- (c) our proximity to areas from which an enemy could launch an intense bombardment with comparatively little warning.

On the other hand, the increased tempo of war and the difficulties of keeping open our sea communications emphasize the desirability of self sufficiency.

##### Bases, Supply Routes and Overseas Expeditions

37. The power of mass destruction weapons and the increased ranges from which attacks can be delivered will have profound effects on the organisation of supply in war, and on the



technique of amphibious operations. The more important aspects of this are as follows:-

- (a) Established ports in the United Kingdom and, overseas, the concentrated base area organisation, e.g. Suez in the last war, will be highly vulnerable. Dispersion of port facilities will be required; new techniques for dispersed base working and unloading of merchant ships will have to be developed. Methods of unloading cargoes on beaches will require development, necessitating new design of specialised shipping craft, pontoons, etc.
- (b) The retention and development throughout the world of a number of dispersed and alternative bases for use in war will be of great importance. As far as possible these bases should be stocked up in peace time to make them self-supporting for a period in war.
- (c) The present conception of a fixed line of communication working from concentrated terminals will require drastic modification to achieve greater dispersion and flexibility. Reduced capacities may have to be accepted.
- (d) Amphibious operations will be more difficult and new techniques will have to be developed.
- (e) Supply and movement by air will be even more important than in the last war.

#### Man-power

38. The vast power of mass destruction weapons and the superiority of some forms of attack over foreseeable means of defence will necessitate tying down a high proportion of our man-power to defensive tasks.

#### Defence of North America

39. The potentialities of the new weapons will bring the war nearer to America. Nevertheless the Pacific and Atlantic oceans still remain most effective barriers, more particularly in view of the lack of Russian naval power, which it will take many years to redress, and her comparative backwardness in long range air action.

Increased importance attaches to Arctic areas as possible theatres for offensives by air, by rocket and on land. Modern techniques may open up possibilities of operating in these areas to an extent previously regarded as impossible.

#### Strategic importance of areas containing oil, uranium and thorium

- 40. (a) The trends in the design of new weapons have further increased the importance of areas containing oil.
- (b) It is important to deny in peace to any potential enemy areas containing Uranium and Thorium.

CONCLUSIONS.

41. By 1956 development of new weapons at present foreseen will:-

- (a) Open up the possibility that an aggressor may achieve decisive results by attacks against industry and the civil population in the United Kingdom with mass destruction weapons.
- (b) Weight the balance heavily in favour of the offensive compared to defence.
- (c) Accentuate previous strategical developments in respect of space and time: it will be possible for attacks to be launched from greater distances with greater possibilities of surprise, and they may be decisive far more quickly.
- (d) Increase the strategical importance of the Dominions relative to the United Kingdom.
- (e) Increase considerably the difficulty of supply by sea routes.

42. On this basis, we conclude that the following are the main considerations which will affect our defence policy:-

- (a) We must be prepared for the enemy to strike in full strength with little or no warning and with the use of all weapons.
- (b) A high proportion of our available man-power must be allocated initially at least to the defence of the U.K. and other bases.
- (c) The vulnerability of the United Kingdom will be greatly increased and its capacity as a centre of war production considerably reduced.
- (d) The organisation of bases and of lines of supply and of communication in war will require radical modification to make them less vulnerable. The technique of amphibious operations will require modification.
- (e) Our ability to retaliate in kind will be our only ultimate defence.
- (f) The potentialities in range of the new weapons and the opening up of Arctic routes will create new problems in the defence of the American Continent.
- (g) Sources of oil will be more important than ever.
- (h) It is important to deny in peace to any potential enemy areas containing Uranium and Thorium.

### PART III

#### DEFENCE PREPARATIONS IN PEACE

43. To reduce the present balance in favour of an aggressor, preparations in peace must be directed to the points below.

##### Development of Defence against mass destruction weapons

44. Unremitting research and effort is required -

- (a) To develop improved methods of air defence with emphasis on radar, the G.A.F. and the interceptor fighter;
- (b) To discover, develop and organise means of detection of, and protection against B.W. agents and gases;
- (c) To improve defence of shipping.

##### Maintenance in peace of Long Range Air Striking Forces for Retaliatory action

45. (a) These necessarily cannot be large but they must be highly efficient and at immediate readiness. Bases for their use must be established as far forward as political considerations will permit.
- (b) We must maintain our technical lead in the offensive uses of Atomic and Biological Warfare.

##### Reduction of the vulnerability of the United Kingdom

46. This will require:-

- (a) The strengthening of potential Allies in Western Europe, particularly Holland, Belgium and France, in order to deny in war, for as long as possible, bases for short range air action against the United Kingdom, and to provide depth to our defences.
- (b) Highest priority to be given to forces for air defence, and for the defence of our shipping routes.
- (c) Increased allocation of man-power to civil defence; a heavy commitment will fall on our land forces in respect of aid to the civil authorities.
- (d) Dispersion of population and industry within the United Kingdom.



- (e) Greater storage and dispersal of essential materials in peacetime.
- (f) Underground protection on a large scale for vital materials, installations and services.
- (g) Removal from the United Kingdom of certain vital organs of Government and of defence which do not require to function within the danger area, and evacuation as far as circumstances will permit of useless mouths.

World-wide dispersion and co-ordination of war production.

47. As far as social, political and economic considerations will permit:-

- (a) We must alter the balance in war production between the United Kingdom and other areas of the Commonwealth; Canada, Australia, India and South Africa, should become as self-sufficient as possible.
- (b) We must co-ordinate plans in peace for reserves and for development of war production in the United Kingdom and the United States of America, to anticipate in war the reduction in United Kingdom productivity, and in the effective capacity of her sea communications.

Reorganisation of Bases and Supply routes.

48. Operational research is required to determine what modifications are necessary to the supply organisations of the Allies, in particular in respect of:-

- (a) Imports into the United Kingdom.
- (b) The organisation of overseas bases for the Allies in the event of war, particularly in the Middle East;
- (c) Lines of communication in a theatre of war.

49. Overseas areas will require stocking up in peace to make them self-sufficient for a period.

50. Provision must be made in peacetime for air movement and supply in war where essential.

Man-power for defence.

51. Our fight for survival may reach a climax in the first few months of a war; in the most difficult case, i.e. the use by the enemy at the outset of all available weapons, a very great deal will depend on the availability of trained and disciplined man-power. To this end, the resources of the United Kingdom, the Dominions and the Colonial Empire must be fully exploited in peace, and the assistance of the United States made available at the earliest possible moment should the threat of war be imminent.

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29TH OCTOBER, 1946.

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JOINT INTELLIGENCE SUB-COMMITTEE

PROBABLE STRENGTH AND NATURE OF THE  
SOVIET ARMED FORCES AND OF THOSE OF  
HER SATELLITES IN 1956

Report by the Joint Intelligence Sub-Committee

We have prepared a study of the Probable Strength and Nature of the Soviet Armed Forces and those of her Satellites in 1956. Since the whole subject can only be a matter for conjecture, it is emphasised that the opinions expressed are no more than tentative.

MAN-POWER

2. U.S.S.R.

(a) In 1941 there were, within the pre-war boundaries of the U.S.S.R., 35 million fit men of military age (17 to 50). During the recent war the Soviet Union was able to mobilise 22 million men in her armed forces, although about 12,000,000 was the maximum at any one time. By comparison, 14 million were mobilised in the U.S. forces and 12 million in those of the British Empire.

(b) We believe that, at the present time, there are about 31 million fit men of military age in the Soviet Union, inclusive of the incorporated territories. We estimate that this figure may rise to about 42 millions by 1956.

(c) Since from 35 million fit men, the Soviet Union was able, during the recent war, to mobilise 22 million, it is possible that, from about 42 million fit men, she might be able to mobilise about 25 million during a similar major war which began about 1956.

3. SATELLITES

Out of a total population of about 70 million in the satellite countries, there are about 15 million fit men of military age.

## STRENGTH OF ARMED FORCES

### 4. U.S.S.R.

(a) We believe that the present strengths of the Soviet armed forces are approximately as follows:-

Army	3,750,000
M.V.D.	600,000
Air Force	750,000
Navy	200,000

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5,300,000

(b) We estimate that the total peace-time strength of the Soviet armed forces will fluctuate between about  $4\frac{1}{4}$  and about  $5\frac{1}{2}$  millions, during the next ten years. The total in 1956 may possibly be divided up roughly as follows:-

Army	3,000,000 to 3,750,000
M.V.D.	450,000 to 600,000
Air Force	600,000 to 850,000
Navy	300,000 to 500,000

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4,350,000 to 5,700,000

(c) Mobilisation. By the end of 1947, the Soviet mobilisation procedure for the Army should be well established, and may provide a strength of from 370-400 divisions, or 8,200,000 men by D + 30. During a major war, (of duration similar to the recent war) starting about 1956, the numbers of men progressively mobilised in the Soviet armed forces may be approximately as follows:-

Army	19,000,000
M.V.D.	3,000,000
Air Force	2,500,000
Navy	450,000

---

24,950,000

An estimate of the maximum strengths which the armed forces might attain, at any given time, is as follows:-

Army	12,000,000
M.V.D.	2,500,000
Air Force	2,000,000
Navy	400,000

---

16,900,000

### 5. SATELLITES

(a) The peace-time strengths of the satellite armies total about 900,000 men. Mobilisation might increase this figure to about 1,200,000 by D + 30.

(b) It is possible that as many as 8 million men might eventually be mobilised from the satellite countries in the course of a major war.

(c) We consider that the reliability of satellite armed forces would be low.

## NATURE OF SOVIET ARMED FORCES

6. We estimate that, generally speaking, the nature of the satellite forces will follow the Soviet model, and we, therefore, only consider the Soviet armed forces in this part of the report.



## ARMY

7. It is unlikely that the Soviet Army of 1956 will be similar, in nature, to that of 1946, namely one that is founded on very large numbers. Elements of the Army will probably be designed for the following tasks:-

- (a) To overrun large areas rapidly.
- (b) To provide static garrisons in overrun territories.
- (c) To hold down unreliable satellite countries.
- (d) To carry out seaborne landings.
- (e) To carry out airborne landings.

## Equipment

8. It is an avowed object of the Soviet leaders, at the present time, to bring the standard of equipment throughout the Soviet Army up to that of their best equipped divisions as they were at the end of hostilities. Already, great efforts are being made to improve the Army's mobility. The whole process of re-equipment is likely to be continued until the 1945 standards of the British and American Armies have been equalled or surpassed, in respect to such a proportion of the Army as Russian industry could maintain. This may amount to some 200 divisions. The Soviet Union is, even now, mass-producing such weapons as the "Pike" tank and the 100 mm. anti-tank gun, which are undoubtedly in advance of any yet produced in large numbers by any other country.

## AIR FORCE

### Aircraft Strength and Disposition

9. The present first line strength of the Soviet Air Force is estimated at a maximum of 20,000 aircraft, which are disposed as follows:-

Northern Group of Forces (Poland and Germany)	2,500
Central Group of Forces (Austria and Hungary)	1,500
Southern Group of Forces (Roumania and Bulgaria)	1,800
Soviet Union, West of Urals	10,000
Soviet Union, East of Urals	2,500
Fleet Air Arm	1,700

In addition, there is a transport force (Civil Air Fleet) estimated at 10,000 aircraft.

10. It is estimated that the present second line strength of the Soviet Air Force is in the region of 25,000 aircraft of all types, this figure covering both obsolescent and obsolete aircraft, of low operational efficiency. It is believed also, that in addition to the second line strength there are approximately 20,000 aircraft of miscellaneous and training types.

11. Aircraft reserves are not estimated separately, and in all cases the figures quoted include tactical and stored reserves. The estimates of first, second and third line aircraft strengths are based on the estimated total strength of the Soviet Air Force at the end of the recent war.

12. It is difficult to estimate the numerical strength of the Soviet Air Force in 1956, but it is likely that it will exceed the numerical strength of the air forces of any Power, or group of Powers, which the Soviet Government consider to be potential enemies. The Soviet Air Force is at present primarily concentrated behind and around the Soviet Union's Western and South Western borders. It is likely that in certain circumstances the concentration of air forces in the Soviet Far Eastern territories may be increased, and as a broad picture, the dispositions in 1956 of first line strength might be in the proportion of 75 per cent. to the Western and South Western borders and 25 per cent. to the Far Eastern territories.

#### Aircraft Production

13. Our present estimate of the maximum monthly production of aircraft in the Soviet Union is 5,300 aircraft of all types. It is likely that the Soviet aircraft industry in 1956 will be sufficiently developed to enable it to meet the quantitative requirements of the Soviet Air Force.

#### Aircraft Research and Scientific Development

14. Captured German equipment, personnel, scientific developments and research facilities are producing a very pronounced acceleration of Soviet aircraft and aero-engine development. The indications are that this exploitation is confined to the production of known German types of aircraft and aero-engines, and of known German projects, and not to the development of entirely new undertakings. Shortages of skilled Russian personnel, and the employment of German labour as a substitute, are not likely to produce an inventive or resourceful aircraft industry, and it is likely, therefore, that the Soviet Union will have difficulty in achieving equality with Great Britain and America in the development of future types of aircraft and aero-engines. It is estimated that technically, Russian aircraft will be between 4 and 5 years behind our own in 1956.

#### Role

15. During the recent war, 75 per cent. of the Soviet Air Force was employed in a tactical role in support of the Soviet ground forces, being sub-divided, by aircraft types, in the proportion of 40 per cent. fighters, 20 per cent. ground attack, 25 per cent. bombers and 15 per cent. miscellaneous types. There is no evidence to suggest that this sub-division has, as yet, been altered.

16. It is estimated that the first line strength of the Soviet Air Force, in 1956, may be divided in the proportion of 35 per cent. fighters, 20 per cent. ground attack, 20 per cent. light and medium bombers, 15 per cent. heavy bombers and 10 per cent. miscellaneous types. The present estimated figure of 10,000 Transport aircraft of all types is likely to increase to approximately 15,000 aircraft while the development of new aircraft will also materially increase the "lift" capacity of this force.



## NAVY

### Aircraft Carriers and Battleships

17. It is not though that Russia intends to build aircraft carriers. She probably appreciates that by the time her shattered shipbuilding industry is capable of building this class of ship, the range of modern aircraft will enable her to operate with land-based aircraft in any theatre in which she may have to make war. It is most unlikely that Russia will embark on a programme of large battleship building, as she probably considers this type of ship will also be out of date by the time she is able to build any.

### Submarines

18. The Soviet Navy will probably embark on a large submarine building programme which will not, however, produce significant numbers before 1949. The Russians have available virtually the entire German experience from the late war, and all or nearly all details of the most modern improvements which were to have been incorporated in the newest U-boats with high under-water speeds. From 1950, the Russian capacity in building submarines is estimated very tentatively at 100 a year. It follows, therefore, that Russia could by 1956, dispose of a very large fleet of submarines, having all the most modern improvements, but which would probably operate with an efficiency considerably below that of a corresponding British or German submarine fleet. It is estimated that the Russian Navy may dispose of as many as 500 high performance submarines by 1956, which might possibly be divided into 200 of the large, 1,700 ton long range class, and 300 of an improved SHCH class of about 700 tons. It is estimated very roughly that one quarter of these numbers could be kept at sea, and on effective patrol, at any one time, rising to one-third in areas close to Russian operational bases.

### Cruisers

19. The Russians have six cruisers of a modern and orthodox type; by 1956 it is possible that they could build 20 more in the Baltic, Arctic, Black Sea and Far Eastern yards.

### Destroyers

20. It is probable that up to 50 destroyers could be build by the Russians by 1956.

### Naval Aviation

21. On the assumption that Russia will not build aircraft carriers, it is likely that the Soviet Naval Arm will be increasingly absorbed by the Soviet Army Air Force proper, and that co-operation between the air and surface forces will not be developed to any great extent. The technique of co-operation between air and submarine forces may, however, be developed along German lines, but with less than German efficiency.

### Personnel

22. While Russian man-power is virtually unlimited, it suffers severely from lack of sea-sense, and the actual maritime population of Russia is comparatively small. This is reflected both in Naval Staff work and in the handling of ships at sea. The Soviet Navy, being a very junior partner to the Soviet Army, has suffered and will continue to suffer, by being considered as a kind of floating auxiliary to land operations.

(Signed) W.G.HAYTER  
G.W.R.TEMPLER  
T.W. ELMHIRST  
R.H.QUILL (for D.N.I.)

Offices of the Cabinet and  
Minister of Defence, S.W.1.  
29TH OCTOBER, 1946.

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S E C R E T

ECONOMIC SURVEY

GENERAL

A realistic examination of the economic position of the Commonwealth, her possible allies and enemies, must take into account new factors -

- (i) The probable military situation shortly after the outbreak of war
- (ii) The effect of new weapons on the conduct of war and national economy.

We propose to comment briefly on the above factors, all of which are enlarged upon elsewhere in the paper.

The Probable Military Situation

2. We have shown in a separate examination that shortly after the outbreak of war, Russia may have occupied the whole of Europe. In addition, we expect Russia to have occupied Turkey, Persia, and Iraq, and at least denied to us Iranian and Iraqi Oil. In short, our economic survey assumes that no supplies or raw materials can be drawn from Europe or Persia/Iraq, nor any reliance placed on raw materials from Turkey. India and the Far East generally up to Hong Kong will remain open to us, at least in the early stages; but no reliance can be placed upon a regular flow of trade from any Mediterranean ports.

It is very unlikely that Great Britain will become involved in a war with Russia without the certainty of the early and active support of the U.S.A.

The Effect of New Weapons

3. If atomic bombs and fast long range submarines are available to the enemy, greater allowances must be made for:-

- (i) Losses at sea and more restricted shipping movements, with a reduction in the flow of imports.
- (ii) Increased vulnerability of ports and disruption of dependent distributory organisations.
- (iii) Greater losses of distributed supplies and industrial disorganisation caused by heavy destruction in built up areas.

4. If Biological Warfare is initiated as an alternative to atomic weapons, the resultant disorganisation would create problems at least as far-reaching as those above, while if used in combination the overall situation would be worsened.

5. Under any of the above conditions, it is clearly evident that the United Kingdom is susceptible to a greater degree of interference than any country not actually part of the European continent. Conversely, within the period under review, a scale of attack sufficiently heavy or widespread seriously to disrupt the economy of the other non-European countries likely to be supporting an Anglo-American alliance is extremely remote. Russian, and possibly Russian-occupied, territories, although more vulnerable than non-European allied countries, are far less vulnerable than the United Kingdom.

In short, technical development - as at present foreshadowed - can have very great repercussions on the economic and industrial life of the United Kingdom, but may be regarded as only intensifying the effect of conventional war in other countries.

### INDUSTRIAL WAR POTENTIAL

#### General

6. While the war has seriously weakened the military potential of the United Kingdom, it has strengthened that of the Dominions.

7. Industrially, it is doubtful if the United Kingdom could again achieve the peak level reached in 1944, but as opposed to this, the war has led to a marked acceleration and expansion of industrial development in the Dominions, including an increase in ship building capacity.

8. Financially, Britain has emerged from the war impoverished and denuded of her overseas assets. The Dominions on the other hand, particularly Canada, have reduced their foreign liabilities.

9. In general therefore although the United Kingdom is considerably weaker than in 1939, this has been offset to some extent by an increase in the industrial war potential of the Dominions; there is every sign, at any rate in the case of Canada and Australia, of this potential being preserved and increased. In a sense this development may be regarded as the first phase in the dispersal of United Kingdom economic, and hence war, potential, but it is important to remember that it has not been accompanied by a corresponding dispersal of man-power. In this respect 60% of the Commonwealth White population is still located in the United Kingdom.

#### United Kingdom.

10. The importance of taking all possible steps to ensure that "war potential" industries in the United Kingdom are kept at a high standard of efficiency in peacetime cannot be over stressed. We must not lose ground in such vital

industries as optical glass, tools and gauges, radio and electrical apparatus, and certain chemical industries. The difficulty of developing rapidly during war a sufficient munitions industry will be far greater than it has been in previous wars, on account of the scale of enemy bombardment to which this country will be subjected, with its resulting industrial disorganisation. Moreover, because the initial period of war will be the most critical time for us, during which, in the worst case, our industries will be hard put to it to produce the bare requirements for the home "front line", a rapid expansion of the munitions industry in the early days will be more decisive than a gradual expansion to peak production after several years. This again emphasises the need for maintaining a high war potential during peacetime.

#### Cooperation with Dominions

11. We also consider it essential that the United Kingdom and Dominions should co-operate in the planning of war potential. For instance, during the last war the United Kingdom financed Canadian capacity to expand output of ferro-alloys; but the future of this industry in Canada now appears to be uncertain because Canada cannot compete with Scandinavia for the United Kingdom market. Similarly, the future of Canadian shipbuilding - built up during the last war to meet vital needs - is uncertain.

12. In previous wars the Dominions have relied upon the United Kingdom to supply them with a large percentage of their munitions and other vital war needs. But, as indicated in paragraph 10 above, the United Kingdom will, in the event of full scale enemy bombardment, find it difficult enough to provide the means for bare self defence, and will clearly not be in a position to export munitions overseas; the Dominions must therefore aim at self-reliance. This emphasises the extreme importance of Commonwealth planning, on an integrated military and civil basis.

#### United Kingdom - Dependence upon Imports

13. The economic life of the United Kingdom, with the exception of coal and iron ore, is almost entirely dependent upon imported raw materials, home grown stocks of timber having been almost exhausted by World War II. In World War II we lost most of our European Markets, but experience proved that we could obtain our required quantities of essential raw materials - in many cases only with the utmost difficulty - from sources outside Europe. In a future war, however, not only shall we lose all European markets, but we shall be denied at least the bulk of Middle East Oil.

14. A material which has become of extreme importance since World War II is uranium. Uranium and oil are dealt with in more detail in paragraphs 50 and 24 below. Apart from Oil however it is evident that we shall in most cases have access to adequate alternative sources of supply for all essential raw materials, outside Europe and the Middle East; and that, provided we can meet certain difficult cases, such as timber, our real problem will be one of maintaining and distributing stocks against the sea and air threat rather than one of lacking markets in which to procure them.

15. We consider that Far Eastern sources of supply will be open to us: but it would clearly be of advantage to build up in peacetime stocks of essential raw materials from those countries in order to avoid the long haul that would be involved at the outbreak of war, at a time when shipping space will be at a premium. This applies particularly to Northern China on account of its uncertain political future.

#### RAW MATERIALS

16. In the last war we took limited action to stockpile during the warning period, in order to save shipping space after war had broken out, and to provide a buffer against shipping losses and markets cut off by the war. A new factor however is that, whereas in previous wars imports were more secure after they had been landed in this country than they were when shipborne on the high seas, the advent of the atomic bombs and rocket may well reverse the position in the next war. It would clearly be folly to amass large concentrations of raw materials which would be subject to complete destruction by enemy bombardment. Nevertheless stock-piling will be essential, due to the increased threat to our shipping occasioned by advances in submarine and air warfare. In general therefore stocks in United Kingdom must be amassed in underground or widely dispersed storage. but because of the magnitude of the task of storing every kind of imported raw material and foodstuff considered essential for war, we shall need to confine ourselves in the main to the less bulky commodities, and to building up stocks of only those materials requiring large storage spaces which are absolutely vital to the war effort.

17. Apart from the physical difficulties regarding availability of storage space, our stock-piling during the years of peace will be limited by financial and procurement considerations, and may well conflict with general economic and other peacetime considerations. We clearly are not, in a position to raise stocks by vast expenditure of American dollars. thus we must as far as possible buy in sterling markets even though they become closed to us on the outbreak of war. Nevertheless alternative sources of supply which will be essential to us in war must not be allowed to decay in peacetime beyond their capability of quick redevelopment in war, and in order to nurse such sources of supply it will be necessary on strategic grounds to buy certain raw materials in peacetime from uneconomical sources. Certain essentials also will be difficult to procure at the present time because the world demand equals or already exceeds world supply; wheat and fertilizers are examples of the present day.

18. The need to create strategic reserves of certain key raw materials will depend very largely on the extent to which existing United Kingdom industrial capacity is kept in being: the new CALCIUM CARBIDE and BROMINE industries - neither of which is greatly dependent upon imported raw materials - which were created in England during the last war to meet war-time needs, have made us self-sufficient in those industries. Such industries, which remove or reduce the need for a stockpile, must not be allowed to stagnate. It is important not to overlook this interaction of plans in the fields of industrial war potential and strategic reserves.

19. Subject however to the above, a steady and unobtrusive policy of stockpiling must, we consider, be pursued in all possible directions which will not have serious repercussions on the world market.

#### Trade and Private Stocks

20. In order to relieve the Government of the task of bearing alone the burden of collecting, and paying for, a formidable list of essential raw materials, we consider it important that private traders should be encouraged or constrained to maintain good-sized stocks at all times, which would be available to the Government in the event of war. This presents obvious difficulties, but the more people who can be involved in stockpiling the better, as greater dispersal of stocks would thereby be ensured. Taking this to its ultimate conclusion, if every private householder were encouraged to store six or twelve months' supply of suitable foodstuffs, stocks would thereby be automatically widely dispersed over the whole country.

#### Stockpiling in America and Dominions

21. Consideration of the above factors points to the necessity of stockpiling in the United States and Canada, as well as in the United Kingdom, both because such stocks will be more immune from enemy bombardment, and also because stocks which we are prohibited from amassing due to the dollar consideration can be collected in those countries. Co-ordinated stockpiling in the other Dominions will also be most necessary in order to decrease their dependence in war upon imported raw materials for their industries, thus saving valuable shipping space.

#### Reciprocal Trade

22. It is evident that in our present and continuing position of a debtor nation we shall not be able in the next war to trade on a reciprocal basis in order to balance our payments: when to this financial consideration is added the fact that weapon production in the United Kingdom may in the next war be most seriously hampered by enemy bombardment, it is abundantly clear that we shall need some long term credit system with which to finance our wartime imports.

23. In World War II our limited stockpiling programme began with the commencement of the warning period. but because we cannot be assured of any warning period on the next occasion, we must plan and put into operation a satisfactory scheme of stockpiling as soon as possible. What those needs will be will depend much upon the development of weapons within the next decade. but on the assumption that if atomic weapons are used and we survive the first six months of the war, we shall have weathered the worst part of the storm, it is considered that we should aim at a six months stockpile.



## OIL

24. We do not consider that by 1956 the use of nuclear energy as a source of power will have been developed sufficiently to reduce the importance of oil to the allied cause: the sufficiency of our oil supplies will largely determine the extent of our war effort.

### Oil Requirements in World War II

25. In World War II the United Nations (ex U.S.S.R.) production of crude petroleum, at about 1 million tons a day, just about kept level with allied (ex U.S.S.R.) requirements at the peak period.

### Crude Oil Consumption and Production, 1955

26. The Ministry of Fuel and Power have lately attempted to forecast world crude oil production in 1955. Since world demand will largely determine annual production rate, the problem has been approached from the consumption end: thus an estimate has been made for 1955 of peacetime consumption in the light of modern developments, and an attempt has then been made to show how this demand could be met. The result is shown in the following table.

		1955. Millions of Tons	
	<u>Area</u>	<u>Production</u>	<u>Consumption</u>
(a)	U.S.A.	215	285
	Canada	1	12
(b)	Central and South America		
	Venezuela	66	30
	British West Indies	2.5	
	Mexico	6.5	
	Others	15.0	
(c)	Europe (ex U.S.S.R.)		
	U.K.	-	22.5
	Other	9	37.5
(d)	Middle East		
	Iran	37.5	12
	Iraq	22.5	
	Arasia and Bahrein	20.0	
	Kuweit	15.0	
	Qatar	3.5	
	Egypt	1.5	
(e)	Africa	-	7
	India, Burma, E. Indies and Far East	15	17.0
	Australasia	-	7.0
(f)	U.S.S.R.	45	45
Totals		475	475

27. As regards the production side of the above "balance sheet", a great deal depends on the trend of U.S. output: a steady fall has been assumed on the basis that no major new oil fields will be discovered between now and 1955. On the other hand some allowance has been made for production by the processing of natural gas.

28. In the absence of any reliable information about Russia, it has been assumed that they will be self-sufficient on the basis of their Five Year Programme and the target recently set for 1960 by Marshal Stalin. In practice it is considered that Russia may well become an importer.

#### A Future War. Sources of Oil

29. Examination of the above table shows that, with the exception of Russian, Middle East and European sources, the British Commonwealth and allies will at the outbreak of war have access to all the world sources of petroleum, amounting to an annual production rate of some 321 million tons.

30. The extreme importance to us of Middle East oil, which would bring the above figure up to 421 million tons, needs no stressing. We do not, however, consider that we can count upon the continued availability of Middle East oil after war has broken out because:-

- (a) It is unlikely that we shall be able to hold all, or even some, of the Middle East Oilfields:
- (b) Even if we manage to hold a few of them, it is unlikely that we shall be able to extract anything other than crude oil; the refineries and installations will be an easy target for Russian air and rocket attack, and Russia will fully realize their importance to us.

#### Venezuelan Reserves

31. The above arguments point to the importance of development of Venezuelan oil. This area, in which Britain has a thirty per cent interest, contains nearly twelve per cent of world proven reserves, and offers the most profitable future outside the Middle East.

#### Increased Use of Middle Distillates

32. An outstanding feature of the present day is the growth in the demand for middle distillates - kerosene and gas and diesel oils - as the result of engine development. It has recently been calculated by the Ministry of Fuel and Power that, on present trends, about one hundred million tons a year of crude oil will be needed in 1956 on the basis of current refinery practice, to meet British peacetime middle distillate requirements. This figure, moreover, assumes the adoption of a wide-range distillate which may in fact be unacceptable for combatant aircraft. In war, crude oil requirements for middle distillates might rise to 125 million tons a year or more.

33. To meet this requirement from British or British controlled sources, we could expect to obtain about 18 million tons a year from Canada, the British West Indies, and the Far East, plus a percentage of the Venezuelan output. In the best case this total would clearly be much less than the requirement.



34. We cannot rely upon Middle East oil to make up the deficit, nor can we assume that the United States, at war, will be in a position to help us. It is in fact likely that she will need to import oil for her own requirements.

35. The extract of the middle distillate content from 100 million tons of crude oil would be accompanied by the production of about 75 million tons of petrol and fuel oil, which is more than twice estimated requirements. Unless a proper balance can be made between production of the different petroleum products by adjustment of refining processes, development of additional crude oil production may be hampered by undisposable surpluses.

#### Oil Requirements in a Future War

36. Until the general concept of a future war is clear, it is impossible accurately to forecast what our war requirements would be in ten years time: it is, however, evident that they would be low in the initial stages compared to the peak consumption of the last war and that peak consumption will not be reached until we are in a position to launch our great offensive. It is, however, certain that development of aircraft and other engines will greatly increase their fuel consumption particularly their consumption of the middle distillates: a preliminary estimate by British Service Departments - based on last war requirements - shows that Service consumption alone would rise in another war from a yearly consumption of 13 million tons (World War II) to about 29 million tons of all products. Furthermore, by 1956 normal civil and industrial consumption will have greatly increased as the result of normal progress.

37. We therefore consider that in estimating our peak oil fuel consumption, it would be most unwise to plan on requirements being anything less than in World War II (365 million tons per annum). Present indications are that they will be considerably greater. Without Middle East oil, we shall have to meet those requirements from an annual production rate of some 321 millions of tons.

#### Alternatives to Oil

38. It is clear that in the intervening peacetime years measures must be taken to close, or at least to reduce, the gap between our requirements and what will be available; and it is suggested that investigation should be directed as indicated in the following sub-paragraphs.

- (a) Storage capacity and stocks must be increased throughout the Commonwealth on an unprecedented scale. The only sure way of having Middle East Oil available in a future war is to extract it and store it in secure areas before war breaks out. The possibility of using unorthodox storage "tanks" must be investigated - such as disused mines, quarries, chalk pits, etc. How long oil thus stored will keep, and the problem of refining it, will also need investigation.

- (b) Measures must be taken to increase fuel efficiency within the United Kingdom, to lessen our dependence upon imported oil. It is a paradox that we should ever be short of "fuel", when hundreds of millions of tons of coal lie beneath the surface of the British Isles, capable of conversion to oil, gas, and electricity. An efficient and highly productive coal mining industry is clearly of the highest if not vital importance.
- (c) A national plan must be enforced in peace time, to render industry and civil transport less dependent upon imported oil fuel. It is suggested that in the next war far greater use should be made of coal gas for all motor transport.
- (d) Consideration should be given to large scale synthetic oil production in allied countries, particularly those in a more secure strategic position.
- (e) Alternatives to oil as a source of power must be sought after and developed at high priority. The extreme gravity of our oil fuel position in a future war, particularly as regards the middle distillates, demands most intense efforts to find some entirely new form of fuel - not based on crude petroleum - for aircraft and other high performance engines. This, we consider, to be of very high priority for research and development.

39. The most rigid economy in the use of petroleum products must be encouraged in peacetime and enforced at the outbreak of war (or at the beginning of the warning period, if there is one). A plan must therefore be prepared in peacetime. (It is noteworthy that, whereas in the United Kingdom petrol rationing never reduced civil consumption below 70% of peacetime consumption, German rationing in World War II reduced non-military consumption to 40% of peacetime consumption).

40. We consider it reasonable to assume that Russia will not intentionally embark upon a major war until she has restored her oil industry. But it is generally agreed that even then her internal resources will not be sufficient to support an all-out war effort: she will naturally look to the Middle East to make up her deficiencies. It is, therefore, of the highest importance that in the event of war the oilfields and refineries should not be allowed to fall intact into Russian hands.

## SHIPPING

### Decline in British Shipping

41. In the first decade of this century British ships totalled half the world's tonnage and carried half of the world's international trade; two-thirds of the world's shipping was built in the United Kingdom. In the years between the wars, foreign subsidized shipping and the growth of economic nationalism, resulting in the application of tariffs, quotas, and other apparatus of discrimination, caused the British share to fall from a half to a third. Now, as the outcome of World War II, we find that whilst the Americans own about two-thirds of ocean-going ships afloat, the British share has fallen to about one-sixth of world tonnage. A much higher proportion of this is now on Dominion, as opposed to United Kingdom, Register, mainly as the result of our losses and Canada's contribution to shipbuilding during the war years.

### Strategic Value of British Merchant Fleet

42. Our absolute dependence upon merchant shipping in time of war needs no stressing; the strategic value therefore of a large British merchant fleet in peace is evident. But a common lesson of the last two wars has been that shortly after the outbreak we have found ourselves short of shipping due to:-

- (a) The taking up of merchant ships for specialized services.
- (b) The need to sail in convoy.
- (c) Sinkings.
- (d) The increase in volume of tonnage under or awaiting repair, at a time when a large proportion of British shipyard capacity must be devoted to naval needs.
- (e) Congestion of ports and increased need for import of raw material.
- (f) Reluctance of foreign powers to trade to British ports.

43. It needs little reflection to realise that future weapons of war will aggravate all the above causes of shipping shortage. It is therefore more essential than ever that we build up again a large merchant fleet: but it must be maintained on a profitable basis. A larger fleet than can be profitably maintained must be a subsidized one. but a policy of subsidization would stimulate a similar process in other countries, which would react unfavourably on the profit earning capacity of our own shipping. In order therefore to build up a large merchant fleet, we must do everything in our power to increase the flow of international trade between all countries, for a large part of our shipping earnings have been, and must be, gained in cross trade between foreign countries: these earnings, part of our "invisible exports", are an essential element in our trade balance and form one of our financial sinews of war.

### War's Demand on Shipping

44. Successive wars have shown that the demands made upon merchant shipping for military use have been on an increasing scale: in September and October 1939, fifty of our best and fastest cargo liners were required for conversion to Armed Merchant Cruisers, etc. Thereafter the need for a Fleet Train, for escort carriers, troopships, specialized shipping, vessels to carry assault forces, etc., put a heavy strain upon the Merchant Navy at a time when every ship was needed to maintain the vital pipeline of supplies into the United Kingdom, and at a time when - due to the magnitude of repair work - little could be done to increase merchant navy tonnage.

### Future Planning

45. Bearing in mind the lessons of the last two wars and the extra strain which new weapons will impose upon the Merchant Navy in a future conflict, we consider it fundamental that the close liaison which has been established in both previous world wars between Service Departments and Ministry of Transport should be maintained in peace. The lesson of the years between the wars was that this cohesion was to a great extent lost, with the result that merchant shipping and shipbuilding tended to go its own way, without regard to military "staff requirements". Only by maintaining close contact between the Defence Organisation and Ministry of Transport can commercial requirements be influenced by military requirements in such matters as design of ships, their speed, choice of fuels etc. This is especially important at the present time -

- (a) on account of the trend in the merchant marine to specialize in certain types of ship for particular Trades
- (b) because the possibility that in the next war we may have to unload ships over beaches will call for highly specialized ships and craft for the purpose
- (c) because the trend in military mechanisation requires ships of increasing "lift" capacity.

46. To relieve the Merchant Navy of the necessity of surrendering vital tonnage at the outbreak of war, we suggest that expert examination is required along the following lines:-

- (a) In the early days of the World War II, we bought from the United States eighty ships from the war construction of 1914-18. Many of them had been laid up for long periods. Although such shipping tends to become obsolete and to deteriorate, a similar strategic reserve of ships which are no longer needed commercially would form an invaluable contribution for the import of food and raw materials.

- (b) Certain types of vessels which are needed in much greater numbers in war than in peace (such as heavy-lift ships and small tankers) might be laid up as a special military reserve.
- (c) Service Departments might be more generally responsible for maintaining in peace certain types of highly specialized ships which they do not normally need in peace. Escort carriers, landing ships (infantry) and depot ships are examples.

#### Ship-building

47. To maintain a large merchant fleet, we must clearly maintain a flourishing shipbuilding industry. British shipyards ended the last war with a capacity to build about 3 million tons a year. It is, however, unlikely that in peacetime the output will be much more than half that figure unless we can expand greatly the volume of international trade, and can secure large contracts for foreign building. Nevertheless, we must endeavour to maintain our capacity against the needs of the next war. But if atom bombs are used, we consider it unlikely that British yards will be able to contribute much in the way of replacement of lost tonnage: those yards which escape atomic bomb and rocket destruction will be fully occupied with repair work.

48. The above remarks emphasise the vital importance of merchant shipbuilding capacity in the United States and Dominions. It is noteworthy that in the last war American yards, starting from scratch, approached at one period an output of 20 million tons a year; Canada greatly increased her shipbuilding capacity; so also did Australia. It is essential that this capacity should not be allowed to fall into decay during the peacetime years.

#### Tankers

49. In the late war our own tanker tonnage was quite inadequate to meet British requirements for transport of oil fuel. "lease lend" and foreign tankers on charter did much to make up for our deficiencies, but even so we underwent some anxious and critical times. The loss of Middle East Oil, referred to elsewhere in this survey, is likely in a future war to increase our tanker shortage, on account of the long haul in transporting oil from alternative sources to areas normally supplied by the Middle East. Careful planning will be necessary to ensure that our tanker tonnage is adequate to meet the demands of a future war.

#### URANIUM

50. As far as at present known, the largest reserves of uranium are contained in Sweden, Belgian Congo, Canada and South Africa, though due to development and other difficulties, it is unlikely that any contribution from Sweden can be counted upon for the next five years.

Minor deposits also exist in the U.S.A., Czechoslovakia, Portugal, Estonia, and possibly Australia. There is also believed to be every possibility of important new high or low grade deposits being discovered in the vast unsurveyed areas of the U.S.S.R., China, India and Africa.

51. Existing world's stocks of Uranium and Oxide are concentrated almost wholly in North America. It is however clear that in the event of war Great Britain and her allies will have access to ample sources of Uranium, and that no vital sources will be cut off.

52. Little is at present known regarding the Russian position. She is believed to have the following stocks:-

- (a) 150 tons of Oxide captured in Germany.
- (b) 35 tons removed from Czechoslovakia.
- (c) Some 200 tons derived as a by-product of radium production.

Uranium deposits, believed to be of low grade, are known to exist in Russia, and although the extent of reserves and exploitation are not known, there is evidence that mining is taking place in the Uzbek, Kirgiz, and Tabzhik S.S.R. and that ores are being processed at Novo Sibirsk. It is moreover almost certain that the Joachimsthal mine in Czechoslovakia is being worked under Russian direction.

53. The mining areas referred to above lie within strategic bombing range of India. It is however considered that this is of little significance because -

- (a) of the likelihood of alternative sources being found in unsurveyed areas.
- (b) Russia is unlikely intentionally to engage upon a major war until she has built up sufficient and secure stocks of Uranium.

#### FINANCIAL IMPLICATIONS OF ECONOMIC SURVEY

54. It is evident that we can only secure our economic position in war by very large expenditure of money in peace on:-

- (a) the building of underground and dispersed stores for foodstuffs, oil, and other raw materials;
- (b) the procurement of stocks.
- (c) the maintenance of industrial war potential and encouragement of technical development in key industries.
- (d) The co-ordination of industrial planning in the United Kingdom and Dominions.

55. This will absorb a high percentage of the National Income, which will react unfavourably on present day demands for more consumption goods, shorter working hours, etc. But survival in the next war will depend very largely upon how far the peacetime economic and social programme of the British Commonwealth is allowed to be subordinated to the needs of a future war.

Future Planning Section,  
Cabinet Office, S.W.1.

30TH OCTOBER, 1946.

UK. 5.

TOP SECRETESTIMATE OF ARMED FORCES AVAILABLE IN THE  
UNITED KINGDOM, DOMINIONS AND COLONIES IN  
1956

1. One of the principal objects of our strategic examination is to recommend the size and composition of the forces required for the defence of the Commonwealth in war and for essential tasks in peace.

The shape of these forces, within our limitations of man-power, will be largely determined by the strategic concept that may be adopted in the light of our recommendations.

2. In our strategic discussions, however, we foresee the need for some yardstick by which our strategic requirements can be very roughly assessed; and, for this purpose, we have taken the best available estimates of the three Services. These are shown at Annexes I, II and III.

3. These forces are based on very tentative estimates of volunteer recruiting capacity, on provisional figures for availability of conscripts, and on an allocation between the three Services similar to that found necessary in World War II. Allowance has not been made for the many new factors introduced by the development of new weapons and by other changes in our strategic position.

4. These forces will, therefore, require modification in the light of our strategic policy; it is emphasised that, individually, they can only be used as very approximate yardsticks.

## ANNEX I

### THE NAVY IN 1956

The Admiralty has recently made a tentative assessment of the size and composition of the Navy which will be required for the assurance of Commonwealth security in the event of the Empire being called upon in the future to fight unassisted against any power or combination of powers (excluding the U.S.A.) aggregating considerable maritime and air strength.

This assessment is shown in Column 6 of Table I as "Empire Fleet A"; it includes the Dominion contribution, as far as is at present known, to the Royal Navy.

2. It is apparent that within the next quarter of a century there will be revolutionary changes in Naval Warfare and in the composition of Fleets, occasioned by development of weapons, aircraft and submarines. Thus the "battleship" of the future, if it exists at all, may look very different from the battleship of to-day. Moreover, the final composition of our war-time Fleet will be greatly affected by the composition of our enemy's fleet; for example, if within the next few years we were to go to war with Russia, who is comparatively strong in submarines and weak in surface ships, we should clearly concentrate at building up a fleet strong in the escort and anti-submarine arms, at the expense of the larger ships. The size and composition of fleets which may be allied to us will also affect the size and composition of our own.

3. Thus "Empire Fleet A" must in no way be regarded as our immutable requirements; provided, however, the above factors are borne in mind, it may be regarded as the best estimate which is at present possible of naval requirements to secure the Commonwealth and its sea communications against any possible threat.

#### 4. Empire Fleet A - Man-power

The total man-power requirement for the above Fleet is 613,000. This, which includes Dominion strengths, falls well within the total of 645,000 which has recently been suggested in an Inter-Service Review<sup>\*</sup> as the naval man-power limit in a future war.

#### 5. Build-Up of Empire Fleet A

The rate of build-up of Empire Fleet A will now be examined. Because of the inherent difference between the training and organisation of Naval aircrews and maintenance personnel, and other branches of the Navy, Naval Aviation is dealt with separately in para. 16 below.

6. By mid-1954, the present fluctuations in the numbers of men and women available at any time should have ceased, and a steady man-power figure for the Navy should have been reached. This is, according to latest Admiralty estimates,



208,500 made up as follows:-

180,000 Regulars, including regulars for training  
conscripts and Wrens replacing men

2,500 Wrens not replacing men

26,000 Conscripts

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208,500 TOTAL

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7. The above man-power figure will decide:-

- (a) the number of ships which can be kept in full commission to meet our world-wide peace-time commitments;
- (b) the number of ships which can be commissioned with reduced complements for peace-time training and experimental duties;
- (c) the number of ships which, because of lack of man-power, must be kept in reserve.

8. The best possible use which can be made of the available man-power in peace-time is shown as the "R.N. Peace Time Fleet" in columns 1, 2 and 3 of Table 1. Column 4 shows the main units which it is hoped that the Dominions will maintain. The R.N. Peace-Time Fleet plus Dominion contribution are therefore the basis from which the Empire Fleet must expand.

#### Mobilisation of Peace-Time Fleet

9. Expansion can be considered under two headings:-

- (a) Time taken to bring existing ships up to full war complement.
- (b) Time taken to build and commission ships which do not exist in the peace-time fleet, but are necessary for the Empire war-time fleet.

Referring to (a), it is estimated that, from the time when all Naval reserves are called up, main units in full commission and with reduced complements can be brought up to war complement in two months, and that main units in Category B reserve can be fully commissioned in about seven months. This estimate assumes that ships in reserve are kept up to date by periodical refits in peace-time.

10. The above periods are flexible; if there is a warning period, as in 1938, which allows Reserve Fleet Ships to be refitted more rapidly and a proportion of pensioners and reservists to be called up in advance, then, when war breaks out, some headway will already have been made in bringing the Fleet to a war footing, and the times taken to mobilise will be correspondingly shorter. Similarly, if there is a clear indication that certain types of vessels, for example escorts, are more urgently required in service than other types of ship in reserve, then the commissioning of the required ships can be hastened at the expense of the remainder.

11. Subject to the above, however, the mobilisation of the Peace-Time and Reserve Fleets will take approximately seven months, and by that time total man-power will be about 380,000. This estimation assumes that there will be in force during peace-time a scheme for national service, and that conscripts, after competing their time "with the colours" will be liable to a period on the reserve.

12. Further expansion of the Fleet will be governed by -

- (a) the rate at which new or converted ships and craft can be produced;
- (b) the rate of build-up of bases and establishments;
- (c) the rate at which further expansion of personnel can be achieved.

13. It is clear that the time taken to build up to Empire Fleet A after war has broken out will depend directly upon the warning period. Should another war appear probable, a time will come when the decision is made to mobilise industry for war; suitable merchant ships will be taken in hand for conversion to war purposes; ships already building will be progressed at higher priority; new ships will be laid down. Whether or not this time of rapid preparation will coincide with the outbreak of war or whether it will precede the outbreak, has been examined elsewhere in this paper but it is assumed that full mobilisation of the nation's man-power will await the outbreak. Starting from the commencement of this period of open preparation for war, it is estimated that by hastening the completion of ships already building and by conversion of suitable merchant ships, the Fleet could be built up to a strength approaching 600,000 between 3 and 3½ years.

14. The composition of the Fleet at this period would depend very largely upon experience gained as the result of the progress of the war. "Empire Fleet B" in Column 5 of Table 1 shows a possible composition at this stage.

15. Thereafter, as new ships laid down since the outbreak of war come into service, there will be further expansion, until at about 4 years after the commencement of the period of open preparation, the Fleet reaches the proportions of Empire Fleet A, with man-power of 613,000.

#### Expansion of Naval Aviation

16. The expansion of Naval Aviation will proceed at a slower rate than other branches of the service due to the fact that:-

- (a) it is not possible to maintain in peace-time a large reserve of aircraft comparable to the Reserve Fleet, due to the rate at which aircraft deteriorate and become obsolete; and
- (b) it takes two years to train a pilot under war conditions, and an equal time to produce maintenance ratings of any reliability;
- (c) a large amount of building and engineering work will be required to bring forward reserve air fields for use.

17. Provided, however, a steady production of 85 aircraft per month is maintained for the Navy during the years of peace, backed up by an adequate organisation for a Reserve of Pilots and Maintenance Ratings, then the rate of expansion from the Peace-Time and Reserve Fleets is likely to be roughly as shown in Table 2.

18. An 18 months warning period has been assumed in the composition of Table 2, during which time reserve training can be expanded, the aircraft industry organised on a war footing and merchant ship building can start conversion to Trade Defence Carriers. The same remarks, however, apply regarding the warning period as in para. 12 above.

19. Table 2, which includes Dominion strengths, can, as far as aircraft and aircrews are concerned, be adjusted to any combination of Fleet Carriers and Light Fleet Carriers, on the basis that 2 Light Fleet Carriers (each complemented with 24 aircraft) are equal to one Fleet Carrier (complemented with 48 aircraft). The overall man-power requirements for two light Fleet Carriers are, of course, greater than the man-power requirements for one Fleet Carrier.

#### Amphibious Forces

20. No mention has yet been made of Amphibious Forces, nor are they included in Table 1. The requirement for amphibious craft can only be assessed as the nature of the threat develops and the shape of the war declares itself. It can, moreover, be assumed that the requisite trained land forces for large scale amphibious projects will not be available in the opening stages of a war. Hence the war requirement for landing ships and craft must be met as the conflict develops, and in peace time it is intended only to maintain sufficient forces for a Brigade Group lift, with replacement reserves.

S E C R E T

T A B L E 1

NAVAL EXPANSION.

	1	2	3	4	5	6
SHIPS	R.N. Peace Time Fleet			Dominion Contribution	Empire Fleet B	Empire Fleet A
	In full Commission	Reduced Complements	Reserve Category B.			
Fleet Carriers	4	-	4		10	10
Light Fleets	} 8	} 2	} 2	5	24	40
Escort Carriers					-	3
First Line Aircraft	500			60	1,560	3,090
Replenishment Carriers					-	4
Battleships	3	2	5		10	10
Cruisers	19	2	12	7	40	40
Destroyers	48	39	19	30	136	156
Escorts	40	25	132	47	274	300
Submarines	29	16	35		96	120
Minelayers			3		3	3
Fleet M/S	16	10	22		48	48
Damlayers					12	12
B.Y.M.S., M.M.S. and Trawlers	9	4	37		88	288
Netlayers	2				2	2
Radar and F.D. Training Ships		1			1	1
Seaward Defence Ships					-	2
Coastal Craft	12	20	40		72	200
Fast Tankers	1				5	15
Surveying Ships	7				7	7
Fleet Attendant Ships					-	34
Large Water Tankers					-	11
Destroyer Depot Ships	2		2		4	6
S/M Depot Ships	5		1		6	10
Accommodation Ships					-	13
Fleet Repair Ships	2		3		5	5
Radar Repair Ships					-	2
Naval Air Component Repair Ships					-	000056

Battleships	3	2	5	10	10
Cruisers	19	2	12	7	40
Destroyers	48	39	19	30	136
Escorts	40	25	132	47	274
Submarines	29	16	35		96
Minelayers			3		3
Fleet M/S	16	10	22		48
Damlayers					12
B.Y.M.S., M.M.S. and Trawlers	9	4	37		88
Netlayers	2				2
Radar and F.D. Training Ships		1			1
Seaward Defence Ships					-
Coastal Craft	12	20	40		72
Fast Tankers	1				5
Surveying Ships	7				7
Fleet Attendant Ships					-
Large Water Tankers					-
Destroyer Depot Ships	2		2		4
S/M Depot Ships	5		1		6
Accommodation Ships					-
Fleet Repair Ships	2		3		5
Radar Repair Ships					-
Naval Air Component Repair Ships					-
Aircraft Transports					4
Armament Maintenance Ships			1		-
Special Maintenance Ships			4		-
Fleet Issuing Ships	1		1		2
Special Fleet Train Ships	5		16		23
Naval Air Repair Ships	2		3		4
Harbour Craft Carrying Ships					-
Naval Store Carriers					-
Boom Vessels					72
Boom Carriers					-
Wreck Dispersal Vessels					10

	1	2	3	4	5	6
SHIPS	R.N. Peace Time Fleet			Dominion Contribution	Empire Fleet B	Empire Fleet A
	In full Commission	Reduced Complements	Reserve Category B.			
Fleet and Rescue Tugs	5		2		40	46
Salvage Ships	2		3		5	15
Lifting Craft					21	21
Hospital Ships	1				5	10
Naval Servicing Craft					3,000	4,000
Small Oil and Water Tankers					-	100
Pontoons					64	64

NOTES: (i) Certain less important units are not included in this table.  
(ii) Amphibious Pares are not included in this table.

Salvage Ships	2		3	Document disclosed under the Access to Information Act Document divulgué en vertu de la Loi sur l'accès à l'information	21	21
Lifting Craft					5	10
Hospital Ships	1				3,000	4,000
Naval Servicing Craft					-	100
Small Oil and Water Tankers					64	64
Pontoons						

NOTES: (i) Certain less important units are not included in this table.  
(ii) Amphibious Pares are not included in this table.

TABLE 2  
NAVAL AVIATION EXPANSION

<u>Date</u>	<u>Fleet</u> <u>Carriers</u>	<u>Light Fleets</u> <u>and Escort</u> <u>Carriers</u>
On warning being given.....	4 .....	13
18 months after warning (mobilization..	4 .....	13
19 months after warning....	4 .....	16
20 " " " ....	5 .....	17
21 " " " ....	6 .....	18
22 " " " ....	6 .....	20
23 " " " ....	6 .....	22
24 " " " ....	6 .....	24
25 " " " ....	7 .....	25
26 " " " ....	8 .....	25
27 " " " ....	9 .....	25



ANNEX II

THE ARMY IN THE EVENT OF WAR IN 1956

Part I. Post War Army as at present planned

Post-War Army

1. Plans for the post-war Army have been made on the assumption that there will be permanent national service. These plans envisage an Active Army (Para. 2), consisting of about 250,000 volunteers, 180,000 conscripts and 10,000 women volunteers, and a Territorial Army (para. 3) about 650,000 strong.

THE ACTIVE ARMY

2. (a) In United Kingdom

A.A. Command with a man-power requirement of 31,500.

One corps consisting of -

Two Infantry Divisions  
One Armoured Division  
One Airborne Division (less one Para. Bde. in M.E.)  
  
Two Independent Armoured Bdes.  
Three Independent Infantry Bdes.  
Corps and Army troops including  
Three Field AGs. R.A.

(b) In Middle East

One corps consisting of -

One Infantry Division  
One Armoured Division  
One Independent Armoured Bde. Gp.  
One Independent Infantry Bde. Gp.  
One Para. Bde. Gp.  
Corps and Army troops including  
Two AGs. R.A.

(c) In India

Fifteen Infantry Battalions  
Five Field Regiments R.A.

(d) Far East

Twelve Battalions.

(e) Mediterranean and Caribbean Garrisons

Five Battalions

### THE TERRITORIAL ARMY

3. Of the 650,000 men in the Post-war Territorial Army, only a proportion can be filled by volunteers, who will it is hoped amount to about 175,000. To fill the gap as far as possible it is planned that conscripts will have a reserve liability imposed on them to serve for a further  $5\frac{1}{2}$  years in the Territorial Army after their  $1\frac{1}{2}$  years service with the Active Army. This liability is to be imposed on conscripts of the 1949 and subsequent classes. The first conscripts will therefore be available for the Territorial Army in mid-1950.

4. Assuming that each annual intake wastes at the rate of 3% per year, the Territorial Army will amount to 624,260 in 1956.

5. It is estimated however that not more than 60,000 volunteers will in fact be available, which means a Territorial Army of a total of 509,260.

### Composition of the Territorial Army

6. (a) A.A. Command with a man-power of 192,100 (which with the Regular Component gives a total of 223,600).

(b) One Army of three Corps (less Army and Corps H.Qs.)  
with a total of

Six Infantry Divisions  
Two Armoured Divisions  
One Airborne Division

Three Armoured Bde. Gps.  
Three Independent Infantry Bde. Gps.  
Army and Corps troops including  
Eight Fd. AGs. R.A.  
Nine A.A. AGs. R.A.

(c) All the above formations will be in the United Kingdom.

### DOMINION FORCES

7. The Dominion Forces which are planned to exist in peace are as follows :-

One Canadian Bde. Gp.  
One S.A. Armoured Bde.  
One Australian Infantry Division  
The New Zealand Regular Forces numbering 500.

### COLONIAL FORCES

8. One Malay Regiment Bde.  
Six East African Battalions  
Eight West African Battalions,

### THE INDIAN ARMY

9. In addition, G.H.Q. India have planned that the post-war Indian Army shall consist of the following :-

One Indian Armoured Division  
Three Indian Infantry Divisions  
One Indian Airborne Division  
Two Indian Armoured Bdes.  
Six Indian Infantry Bdes.

## THE BURMESE ARMY

10. It is also planned that there will be in Burma -  
One Burmese Infantry Division.

But in view of the possible future political situation in both India and Burma it cannot be assumed that the forces in paragraphs 9 and 10 will definitely be available.

### Reserves available to be called up in 1956

11. (a) A reserve of approximately 230,000 will be required on the outbreak of war to bring the Active Army up to war establishment. Most of this total will be found from the Regular Army Reservists, the exact total of whom will depend on the rate of voluntary recruiting during the next 10 years.
- (b) A reserve of about 131,300 of the 1947 and 1948 Classes, who will have done an average of 2 years service with the Active Army, but who will not be available until general mobilisation. They will also require a further period of training before joining any formation.

## PART II MOBILISATION

### A. Warning Period

12. It seems probable that the preparatory measures which would be made possible by a period of warning would be limited
- (a) by the political necessity of avoiding any action that could be interpreted as unduly provocative;
- (b) by the economic necessity of avoiding any serious disorganisation of industry which wholesale mobilisation would entail;
- (c) by political considerations at home.
13. We consider therefore that only the following action could be taken before the outbreak of war should a warning period be available:-
- (a) Partial implementation of plans for turning over the country's industry to war production, and the expansion of munitions production.
- (b) Call-up of reservists to complete the Regular Army and to expand A.A. Command to war strength.
- (c) Completion of mobilisation equipment of the Regular Army.

- (d) Embodiment and mobilisation of those units of the Territorial Army required to complete A.A. Command to war strength and to enable the Regular Army to operate in war.
- (e) Mobilisation of first and second echelons of Civil Defence Forces.
- (f) Retention of militia classes with the colours.
- (g) Doubling of peace-time cadre of the Territorial Army, if required.

TIME REQUIRED FOR MOBILISATION AND TRAINING OF FORCES  
AT THE OUTBREAK OF WAR

Equipment

14. The fundamental factor in all schemes of mobilisation is the prior provision of the necessary major equipment such as guns, tanks, vehicles and ammunition. In considering mobilisation we have assumed that in a future emergency, a large proportion of it will exist in peace, since without it all other preparations will be of only limited value.

Mobilisation of A.A. Command

15. It is estimated that A.A. Command, since it is organised on a regional basis could be fully mobilised within two days of the outbreak of war assuming:-

- (a) that all the necessary equipment required for war will exist before the outbreak of war;
- (b) that the Regular Nucleus of A.A. Command has been given priority in peace and is therefore up to strength and could be mobilised to full strength with the necessary T.A. personnel within two days;
- (c) that the T.A. part of A.A. Command has been given priority and is therefore up to its peace establishment and could be mobilised to war strength from a reserve of conscripts who have finished their service with the T.A. but who have been organised on a regional basis in case of war.

Mobilisation of the Active Army.

16. In 1939 mobilisation of the Regular Army was planned so that all formations would be available for embarkation within seven days of receiving the order to mobilise.

It is therefore assumed that all the formations of the Active Army could be mobilised for use within the United Kingdom within four days.

### Mobilisation of the Territorial Army

17. It is assumed that the embodiment of the Territorial Army would not take more than two days.

It is estimated that the mobilisation of Top-priority units of the Territorial Army could be completed within seven days assuming :-

- (a) that the T.A. as planned does in fact exist before the outbreak of war; and that if there is a shortage of man-power those formations required as soon as possible in a war will have been given priority and will be up to strength.
- (b) that the Top-priority T.A. formations will themselves hold prior to the outbreak of war all the equipment necessary to complete mobilisation: equipment for the remainder will determine the rate of mobilisation.
- (c) that the arrangements for handling the personnel of the T.A. on mobilisation are separate from those of the Active Army, so that the T.A. can mobilise simultaneously with the Active Army and not after it as in 1939.

### Training of the Territorial Army

18. It is assumed that with the training it is able to carry out in peace the T.A. should be capable of carrying out :-

- (a) Its duties as the 3rd Echelon of Civil Defence as soon as it is mobilised;
- (b) An operational role within the United Kingdom within one month after mobilisation;
- (c) An operational role abroad within three months after mobilisation.

### Expansion of the Army

- 19.
- (a) It has been estimated that in a future war we shall be unable to maintain a total of more than 30 divisions as compared with the last war peak of 36 divisions. Of these 30 divisions a maximum of six Regular and nine Territorial divisions will exist in peace. In the event of war therefore a further fifteen divisions will be raised.
  - (b) In order to provide the maximum possible number of trained divisions as soon as possible after the start of a war, it will not be possible at the same time to start the expansion of the Army.
  - (c) However, it should be possible to start expanding the Army about three months after the outbreak of war, since by this time the peace-time formations should have reached some considerable degree of efficiency.

- (d) It is assumed therefore that starting about three months after war begins it will be the object to expand the Army to a total of twenty-two divisions by the end of the first year and to a total of thirty divisions by 18 months after the outbreak of war.
- (e) From a man-power point of view this will probably be feasible, but the expansion will depend to a large degree on whether the provision of equipment can keep pace.

Commonwealth

20. The Dominions (including India) and the Colonies intend to raise forces of the following order in the event of war:

<u>Canada</u>	Six Infantry Divisions Four Armoured Bdes.
<u>Australia</u>	Two Infantry Divisions One Armoured Bde.
<u>S. Africa</u>	One Motorised Division One Armoured Division
<u>New Zealand</u>	Two Infantry Divisions
<u>India</u>	Three Infantry Divisions (in addition to those in para. 6)
<u>East Africa</u>	Two Brigade Groups
<u>West Africa</u>	One Brigade Group

21. It is assumed that due to time required to mobilise and train, and owing to shortage of shipping, one-third of these forces will be available in either the United Kingdom or Middle East after six months, and two-thirds by the end of the first year!

### ANNEX III

#### THE ROYAL AIR FORCE IN 1956

##### Air Forces Required

1. A provisional estimate of the minimum air forces necessary to meet our strategic requirements and provide a basis for expansion in war, shows a requirement for 353,000 men - including 54,000 men under training. These would provide for a front line force of 143 Squadrons plus 20 Squadrons Auxiliary Air Force.

##### Regular or Permanent Force

2. A force of this size will demand approximately 299,000 volunteers, although pre-war experience showed that 250,000 volunteers was about the optimum figure to be expected. By improving conditions of pay and service, however, we believe it should be possible to improve on the pre-war intake and - failing that, to make good the deficiency by means of conscripts. Moreover, we estimate that the Air Force should be able to recruit a W.A.A.F. of at least 10,000 women, which would help further to make good any lack of men volunteers.

3. As already stated, a force of 299,000 men will provide for a front line strength of 143 Squadrons, and a tentative breakdown of such a force is given at Appendix 'A'. It is emphasized that this breakdown is based on past experience and in this paper no attempt has been made to modify it to meet the demands of future war.

##### Reserve and Auxiliary Air Force (A.A.F.)

4. To maintain a force of the size described above, it is estimated it will be necessary to build up a reserve of about 155,000 men - including the A.A.F. Apart from ex-regulars, this can be achieved by an annual intake of about 18,000 conscripts made up of 11,000 aircrew and 6,500 ground trades. An increase in the total intake of conscripts will of course be necessary, if the volunteer recruitment is less than forecast at paragraph 3 above.

5. The Auxiliary Air Force will consist of 20 Squadrons, thus bringing the total front line strength up to 163 Squadrons (3163 a/c.)

##### Expansion

6. Although conscription will ensure a minimum reserve of 155,000 men, apart from the A.A.F., on the outbreak of war, it will be largely absorbed in:-

- (a) Raising the regular air force from peace to war establishment,
- (b) Meeting war wastage and in manning the expanding training machine.

7. In consequence there is little prospect of materially increasing front line strength in less than 18 months after general mobilisation, which probably means 18 months after the outbreak of war, the principal limiting factor being the time required to train aircrew.

8. Apart from personnel, however, shortage of aircraft may form a bottleneck. A marked increase in aircraft production is unlikely within 6 months of war being declared, although a 100% increase should be possible within 18 months, which corresponds favourably with the output of new aircrew.



9. Should a warning period of 6 or 12 months be obtained, it will not of itself result in any increase of front line strength. It would, however, allow time to prepare the training machine for expansion and time to re-orientate and expand the aircraft industry.

10. After 18 months the force might expand at the rate of 40-50 Squadrons every 6 months, rising to a peak of about 500 Squadrons (say 10,000 aircraft). This estimate is based on experience in World War II and makes no allowance for the greater degree of disorganisation of industry which may be caused by modern weapons.

#### Dominion Air Forces

11. At Appendix 'B' we give estimates of the peace-time air forces of the Dominions. The following are forecasts of the forces which might be employed outside Dominion territory.

(a) Canada

(b) Australia

2 Fighter Squadrons  
2 Heavy Bomber Squadrons  
1 Tac/R "  
1 A.O.P.  
Possibly 2 Transport and  $\frac{1}{2}$  P.R. Squadrons.

(c) New Zealand

2 Medium Bomber Squadrons  
1 Fighter Squadron  
Possibly 1 Transport and  $\frac{1}{2}$  P.R. "

(d) South Africa (Probably within Africa only)

3 Medium Bomber Squadrons  
3 Fighter "  
Possibly 1 Transport Squadron.

APPENDIX 'A'

Breakdown into Squadron Types of the 163  
Squadron Force (3163 Aircraft)

54	Day Fighter Squadrons	(13 A.A.F.)
12	Night " "	( 3 " )
32	Heavy Bomber "	
17	Light " "	( 4 " )
4	Flying Boat "	
8	G.R. Landplane "	
14	M.R. Transport "	
9	L.R. " "	
4	Ph. R. " "	
3	Meteorological "	

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163 Total (including 20 A.A.F.)

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APPENDIX 'B'

DOMINION AIR FORCES.

1. Canada

2. Australia

At present plans are for a  $13\frac{1}{2}$  Squadron force, but this is likely to be increased up to a maximum of 21 Squadrons.

Breakdown of  $13\frac{1}{2}$  Squadron force is:-

(a) Mobile Task Force.

2	L.R. Fighter Squadrons	
2	Heavy Bomber/G.R.	"
2	Transport	"
1	Tac/R	"
1	A.O.P.	"
$\frac{1}{2}$	P.R.	"

—  
 $8\frac{1}{2}$   
—

(b) Home Defence Force

4	Fighter Squadrons
1	Heavy Bomber/G.R. Squadron

—  
5  
—

3. New Zealand

The peace-time R.N.Z.A.F. will consist of a regular force of  $5\frac{1}{2}$  squadrons backed by a Territorial Air Force of 8 squadrons. Breakdown would be as follows:-

(a) Regular R.N.Z.A.F.

1	Flying Boat Squadron	
2	Medium Bomber	"
1	Fighter	"
1	Transport	"
$\frac{1}{2}$	P.R.	"

—  
 $5\frac{1}{2}$   
—

(b) Territorial R.N.Z.A.F.

4	Fighter Squadrons	
4	Light Bomber	"

—  
8  
—

4. South Africa

In peace-time the S.A.A.F. will be two-thirds manned by conscripts and is planned to consist of a force of 14 Squadrons as follows:-

3 G.R. Landplane Squadrons	
1 Flying Boat	"
5 Medium Bomber	"
4 Fighter "	"
1 Transport	"

—  
14  
—

US.1

TOP SECRET

COPY NO. 7

NOVEMBER, 1946

Note. This report has been drafted by a Committee of senior officers of the armed services after consultation with a number of leading experts in the military, technical and scientific fields. While it does not accord in its entirety with other studies that have been made on the same extremely complex and difficult problem of prognostication, it, nevertheless, represents sound and informed thinking which is believed to be of great value in planning.

ESTIMATE OF THE EFFECT ON NATURE OF WAR  
OF FUTURE TECHNICAL DEVELOPMENTS IN WEAPONS

GENERAL CONCLUSIONS

1. Certain general statements appear sound. These are:

a. Our most probable enemy, the U.S.S.R. can have available in 1956 a small store of atomic bombs and the aircraft with which to deliver them on targets in the United States, Great Britain, Canada and South Africa. As to the United States, they could be delivered on our principal industrial cities in the East, north of Washington, D. C., the Mid-West and the Pacific Coast by airplanes of the B-29 type making non-return flights from bases in eastern Siberia and northern Finland or western Germany. If the Soviets occupied Iceland and operated from there and from eastern Siberia they could strike any part of the United States employing non-return flights.

b. The most profitable targets for the atomic bomb and biological warfare weapons will be major vital areas, particularly industrial centers, communications centers, port areas including naval bases and storage areas. The Soviets may have these weapons and if so they will probably use either or both of them against such targets in the United States.

c. Success in war of the future will depend more than ever before on the industrial capacity and efficiency of the protagonists. Comprehensive organization for total war in order to expedite gearing up of industrial potential will be necessary.

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d. Civil population will be drawn much more closely into war of the future than ever before. Direct attacks on industrial systems and population are a distinct probability, both at the outbreak of war and during the course of the conflict. Civil populations should be educated to these facts now.

e. Dispersion to a degree never before required will be essential during war of the future. Heavy concentrations of supplies in port, base, depot or rear areas will be extremely vulnerable. It is conceivable that heavy concentrations anywhere in zones of the interior will be subject to attack. Large concentrations of merchant shipping or naval forces in port areas will be vulnerable to destruction by atomic bombs.

f. A war with Russia in 1956 would pose great internal security problems for their opponents with a consequent diversion of manpower (military and civil) from the job of defeating the external enemy. Initial attacks against populations will result in additional diversion of our manpower (military and civil) to the tasks of recuperation and restoring or maintaining order.

g. Civil and military defense measures, to include air warning systems, interceptor fighters, anti-aircraft, dispersal and placing underground certain key parts of industries, and anti-sabotage defenses, must be ready or accomplished prior to the outbreak of war.

h. Study of the problem at hand reaffirms that it is vital, both for an estimate of this nature to have any firmness, and for realistic planning for future war with our most probable enemy, that there be found better means of securing reliable information concerning developments within Russia, particularly new weapons and other war equipment. No means of obtaining information should be overlooked.

i. A system of command permitting rapid decisions and prompt implementation of such decisions is a prerequisite for success in war of the future.

j. Communications facilities with improved speed, reliability, versatility and security will be essential.

k. Biological warfare weapons are still in the developmental stage. However, we believe some such weapons will be available for operational use in 1956. The weapon might possibly be of very great effectiveness by that time

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and defense against its use will be dangerously weak if our own work in this line is not continued.

1. Land warfare in 1956 will be more mobile and fluid than in the past but basic methods will not be materially different from those employed at the end of World War II. Forces will be organized and equipped for increased mobility and fire power. Troops in the field would be unprofitable targets for atomic bombs and should be comparatively free from this type of attack. Amphibious operations of the massiveness and concentration of the Normandy type would, however, be extremely vulnerable to attack by atomic bombs and would not be feasible in the face of an enemy equipped with such a weapon unless absolute control of the air rested with us. Greater dependence on airborne operations and limited dispersion of amphibious operations will, therefore, be necessary.

m. Airborne troops will not be put down far in advance of our main forces unless it is necessary to risk this operation in order to destroy or neutralize some vital enemy installation or area. Russian employment of airborne forces may not be circumscribed by the same degree by considerations for eventually recovering such forces as will be necessary in our use of them. Since airborne operations may be of very great importance, continued training and development of equipment, tactics and techniques for such operations are essential.

n. By 1956 there will have been little change in the basic pattern of sea warfare. Both the non-Soviet powers and Russia will have submarines capable of operating at 1000 foot depths at speeds up to 25 knots and staying submerged for long periods. We will have both shallow and deep running torpedoes of greatly increased speed and using target seeking devices. There is no reason to believe Russia will not have such weapons available. Defenses against these weapons must be found and perfected if our own war-making capacity is not to be very adversely affected.

o. Air warfare in 1956 initially will be fought with refinements of the types of aircraft and air weapons we now have. Long range rockets or guided missiles will not have supplanted the piloted bomber by that time. Air tactics initially will be basically the same as those employed in the past war. Continuation or change of these tactics will be dependent upon the effectiveness of our countermeasures to enemy defenses.

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p. Weakening of the enemy's will to resist by air attack will be a much more effective capability in future war than in the past. In the case of Russia, particularly if she possesses atomic bombs, such weakening will be mandatory because of the extreme difficulties of mounting and successfully completing amphibious operations against her. It is conceivable that she could be forced to capitulate by atomic bomb attacks on her major vital areas before our land forces engaged her main armies. In consequence we must at all costs protect and hold areas from which she can be reached with long range aircraft. As a corollary we must organize and have available air striking forces for this task.

q. The non-Soviet powers are not planning aggressive war. The people of some of these powers, particularly the U.S., are not fully conscious of the fact that attack on their homelands is possible. They are not even conscious that war may occur in the next ten to twenty years in spite of the best efforts to avoid it. It is quite probable that the military, hampered by the inevitable charges of war mongering and attempting to dictate policy, will be unable fully to correct these situations.

#### DISCUSSION

2. Developments of new or improved weapons in the following fields are deemed most likely to have important effects on the nature of war of the future: Atomic Weapons, Biological Warfare Weapons, Toxic Gas Weapons, Submarines, Aircraft, Rockets and Guided Missiles, Land Weapons and Equipment, Naval Weapons, Offensive and Countermeasure Radar and Radio Equipment, Proximity Fuses and Target Seeking Equipment. Available information and opinion indicates the following developments and consequent effects on the nature of war in each of these fields:

3. Atomic Weapons: There are too many variables and uncertainties connected with the problem to permit any precise estimate of the refinement and advances which can be made in the field of atomic weapons during the next ten years, except that there does not yet appear to be any prospect of overcoming the impracticability of its production in very large numbers. The amount of

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scientific and industrial effort allocated by governments for atomic weapon development will be a major controlling factor. This in turn will depend to a large extent upon whether or not effective international agreements concerning atomic warfare are concluded. Proceeding on the assumption that such agreements are not concluded and that both the United States and Russia manufacture and store the present type of atomic bomb as rapidly as possible, it appears that by 1956 Russia may have a limited stockpile together with an annual production of 20 to 25 \*; whereas, the United States (assuming no sudden technical development at present unforeseen) could have at least several times as many bombs as are available to the Soviets. This quantity together with continuing production should be adequate to effect almost complete destruction of vital economy of the Soviets within the U.S.S.R., provided the bombs can be delivered to targets with reasonable accuracy. The figure for bombs stored by the United States will be lowered should material be diverted for experimentation or industrial use of atomic energy. Such material could, however, be recovered and converted to the manufacture of atomic bombs in a reasonable time should the international situation indicate the advisability of such action.

4. The possibility of clandestine manufacture of atomic bombs in violation of treaty commitments should not be overlooked. Under such circumstances it is believed that Russia could manufacture and store up to five bombs prior to 1956 and could develop within three to six months after the outbreak of war an annual capable of three or four bombs per year. On the other hand, the United States would honor any world-wide commitments it had made and in consequence would require one year to reach limited production. By the third year of war the United States production should exceed that of Russia at least several times over.

5. It appears that in 1956 atomic weapons will be strategic in nature and best suited for use against major vital areas, particularly industrial targets, port areas and facilities, concentrations of supplies, or concentrations of personnel, shipping, and equipment such as that used in landing operations during World War II. While it will be possible to construct atomic warheads for guided missiles, this will probably not be militarily remunerative by 1956

\*Another source estimates annual production reaching 50 per year about 1956.

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because of the inaccuracy and short range of guided missiles expected to be available at that time. It must be pointed out, however, that the United States would be extremely vulnerable to submarines firing atomic rockets into our vital coast line and port areas from a short distance off shore. This adaptation of atomic warfare seems more likely to be realized by 1956 than the appearance of long range strategic rockets with atomic warheads.

6. It is not likely that Russia will intentionally precipitate a world war unless she has either developed an industrial capacity equal to that of the United States and British Commonwealth or feels that she can in some way destroy or cripple their industrial capacity at the outset of the war. Since Russia probably can not develop an industrial capacity equal to that of the United States and the British Commonwealth by 1956, a world war beginning at that time would most likely be inaugurated by:

- a. Wide spread and devastating sabotage of the United States and British Commonwealth systems and/or,
- b. Air attack against the major segments of those industrial systems employing atomic bombs and BW if either or both were available.

In 1956, assuming we have not signed a treaty designed to prevent atomic warfare, the adversaries of the Soviets will be in a position to retaliate with wide-spread attacks dropping sufficient atomic bombs to completely destroy each of numerous industrial targets within Russia during a short period of time.

7. Assuming the conclusion of a treaty designed to prevent atomic warfare honored by all but Russia, in 1956 Russia could drop a few surreptitiously constructed atomic bombs on her opponents without fear of retaliation in kind during the first year. This points to a need for even more efficient intelligence of activities within Russia after the conclusion of such a treaty than is at present essential, and to the maintenance of an efficient air warning system and interceptor force since there appears to be no defense against the atomic bomb except to destroy either its sources or its carrier. Further, in order to keep panic at a minimum, civil populations would have to be convinced that our best estimates indicate that Russia could only drop from five to ten atomic bombs before retaliation in kind began. These five to ten bombs alone could not

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destroy the industrial capacity of the United States or any other industrial complex. However, accurately and successfully detonated over certain target areas, they could cripple industrial capacity, and panic caused by fear of further atomic attacks could conceivably seriously affect the will of the Soviet's opponents to resist.

8. Biological Warfare: Our best information indicates that the effects of biological warfare on human beings cannot be accurately estimated from its effect on test animals. This type of warfare has, so far as is known, not been tested on humans and it is inconceivable that the United States or the Commonwealth would ever do so. Hence, for the anti-Soviet powers to initiate biological warfare would be to invite world condemnation without any certainty of effective results. However, the possibility and, in fact, the probability of biological warfare being extremely effective must be accepted. Our information indicates that such attacks need not be designed to kill but can be designed to incapacitate for varying lengths of time. The Committee is convinced that it is in a promising developmental stage, and recognizes that continued research in this field could possibly be the most important research and development program underway today. Our best estimates are that Russia is developing this weapon. We, therefore, believe that this program should be pursued vigorously with the view to developing countermeasures against this type of warfare and to perfect the weapon for possible use against an aggressor.

9. Toxic Gas Weapons: The use of toxic gas weapons in future war is problematical. However, new and more deadly gases were developed between World War I and World War II by both the Allies and Axis Nations. There is no reason to believe that other countries will abandon research in this field during the next ten years. We, therefore, must continue our own research in order to improve countermeasures and the weapon itself.

10. Submarines: In 1956 the United States, Britain and Russia will probably have in operation submarines capable of cruising at a depth of 1000 feet at speeds up to 35 knots, not required to surface in order to replenish oxygen and firing high speed torpedoes which may be equipped with seeker or homing devices.

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Assuming that the war is carried on from bases outside the North American continent, and that the Soviets had not as yet developed extensive seaborne forces, possessions of such submarines would be of much greater advantage to Russia than to her opponents. It follows that the development of effective countermeasures against such submarines is of the utmost importance. It appears that this can best be accomplished by immediately constructing such submarines for the purpose of experiment and training. It was demonstrated in the last war that submarine bases can be made almost impregnable to air attack and that the best defense against submarines is to destroy them at sea. By dispersion, submarine bases could be made unprofitable targets for atomic bomb attack. However, the problem of locating submarines in deep water is most difficult. There is some evidence that the submarine itself may become the best anti-submarine weapon. The Committee can only stress that there is every indication that enemy submarines may be an even greater menace to us during the next war than they were during World War II unless the problem of defense against future submarines is solved beforehand.

11. Aircraft: War in 1956 will be fought with refinements of the type of aircraft and air weapons we now have. The problem in connection with air weapons is to estimate the range, speed, load capacity and service ceilings which will be attained and to determine whether such possible defensive measures as anti-aircraft shells or rockets employing proximity fuzes and seeker or homing devices or improved enemy fighters will make strategic and tactical bombing as practiced in the last war too costly to be employed in warfare in 1956. It now appears that airplanes capable of supersonic speeds will not be in service prior to 1956. Bomber aircraft with a combat radius of three to five thousand miles with a cruising speed of 400 to 450 miles per hour and capable of carrying at least 10,000-pound bomb loads to this distance will undoubtedly be available. Improved jet fighters will be available in quantity. Cargo or troop carrying aircraft capable of lifting 100,000 pounds of pay-load are probable. Such aircraft capable of lifting a 35,000 pound pay-load are a certainty. There is no doubt that the equipment will be available to enable us to practice air warfare basically as it was carried out during the past war but with greatly improved tactics, techniques and accuracy. Enemy defenses will determine whether this is done.

12. There appears no reason to doubt that in 1956 the Russians will have bomber aircraft in quantity with minimum performance at least as good as that

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of our present B-29's, high performance jet interceptor aircraft, anti-aircraft guns and rockets using proximity fuzes and seeker or homing devices, and radar equipment at least as good as that we possessed in 1945. The unanswered question is whether countermeasures can be developed which will defeat the seeker and homing equipment, detonate the proximity fuzes prematurely, and destroy the accuracy of radar gun laying equipment. Our information is that this is not impossible. We believe that air tactics in 1956 would initially be basically the same as those employed in the past war and that continuation of these tactics would be dependent upon the effectiveness of our countermeasures against enemy defenses. We do not believe that defenses can be developed which are capable of preventing the dropping of atomic bombs on enemy targets from the aircraft which will be available to us in 1956. We can foresee that it may be necessary to fly in large formations in order to deliver one atomic bomb on a specified target, the large formation being for the purpose of mutual defense and deception as to which airplane is actually carrying the atomic bomb. Further, it is possible that effective countermeasures (jamming) equipment will be of such size and weight that some airplanes will carry this only and either fly in the formation of bombers or precede them at a specified interval.

13. Attack by conventional aircraft will be supplemented by rockets and guided missiles. However, we do not believe rockets and guided missiles, having sufficient range and accuracy entirely to replace long range bombers, will be available by 1956. In other words we believe that the era of "push button warfare" will not be realized by that time. We further believe that any publicity tending to make the public believe such an era is either here or that it will be realized in the next ten years impairs the ability of the Armed Forces of the non-Soviet powers to discharge their responsibility to provide security for their countries by leading the public to underestimate the manpower requirements for the Armed Forces, by giving a false sense of security and by destroying the willingness to supply the huge funds necessary for research and development if we are to keep abreast of other countries in the development and refinement of weapons and techniques. Further, if we lead the public to believe that "push button warfare" is now practical and they later discover the falsity of publicity their confidence in the leaders of the Armed Forces will be greatly lowered to the detriment of provision of funds and resources for adequate security.

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14. Rockets and Guided Missiles: There will undoubtedly be a much larger use of rockets and guided missiles in warfare of the future. Ground to air rockets or air to air rockets employing proximity fuzes and seeker equipment will probably be available and extremely effective against aircraft travelling at subsonic speeds. However, against aircraft travelling at supersonic speeds such weapons would not be so effective because of the little time available for turns when following a target. Since aircraft with supersonic speeds are not expected to be available by 1956 it follows that our aircraft will be highly vulnerable to such missiles and to anti-aircraft shells employing such devices unless effective countermeasures are perfected.

15. High speed air to air rockets without seeker equipment but sighted by some radar method will probably be available in quantity. Guided bombs to be released well away from the target area will also be available and should be very effective. In general it can be said that the possibilities in this field are enormous but that the problems yet to be overcome are also very great. In fact, these problems are of such magnitude that we feel safe in estimating that while rockets and guided missiles will be available to supplement conventional fire power in 1956 they will not fully replace the fire power of conventional weapons. We also feel safe in predicting that countermeasure equipment will be produced capable of jamming seeker and homing devices and prematurely detonating proximity fuzes thereby destroying their effectiveness. However, as one set of wave lengths is jammed others will probably be put into use. We foresee a race between measures and countermeasures.

16. We see no effective defense against very high speed rockets sighted and fired by conventional means except to destroy their carriers in the air or their launching sites. Further since launching sites need not be permanent installations in one fixed location, this latter method of defense is considered most difficult.

17. Our belief is that efforts to produce an accurate very long range rocket capable of employing an atomic warhead should be pursued with vigor. Such a weapon, if it can be perfected, would until developed by other nations, go a long way toward insuring our ability to force capitulation upon any enemy anywhere with a minimum expenditure of our own manpower. When such weapons are

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in the hands of enemy nations as well, mutual annihilation can become at least a partial reality and the deterrent effect of each a mutual capability would enter into effect.

18. Land Weapons and Equipment: As a general statement it can be said that the policy being pursued by the U.S. Army is to develop weapons and transport which will make our ground forces more mobile. Every effort is being made to design and procure motor transport which will travel cross-country and permit our forces to make minimum use of roads. This equipment will not all be amphibious and therefore the Army will be equipped with more and larger temporary bridging. The infantry soldiers' equipment will be simpler and lighter and designed so that it can all be airborne.

19. Tanks will probably be lighter, more mobile and more dependable. Such tanks will be better adapted to the expected more fluid warfare of the future. The tendency will be away from the one hundred-ton tank equipped with a 105 mm or larger gun and toward tanks on the order of 25 to 40 tons equipped with very powerful artillery.

20. Emphasis in our ground forces at present is being placed on the following: development of more individual initiative, better small unit leadership, dispersion and concealment, fluid methods of fighting, improved communications, lighter and more powerful weapons, protective clothing for the individual soldier, and the training of forces for airborne operations. All of these developments point to much more mobile ground operations and fluid battle situations requiring quick reliable communications facilities. We believe these will be realized and that in consequence fighting will in fact be more fluid in war of the future but that the basic methods will not be materially different than they were at the end of World War II.

21. Airborne operations may be used extensively. However, unless it is necessary to risk such an operation in order to destroy or neutralize some vital enemy installation or area, we do not believe troops will be put down far in advance of our main forces. But, since in a war against Russia they may have to be extensively employed, continued training for such operations and development



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of improved equipment, tactics and techniques are essential. On the other hand, Russia, with vast reservoirs of manpower, might be more ready to use large airborne forces in raiding operations even though the chance of eventual recovery of these forces is slight.

22. Amphibious operations present a very great problem. There will be no landings of the massiveness and concentration of the Normandy type in the face of an enemy possessing atomic bombs. In any event the improved and more powerful weapons which we must expect our enemies to possess will force us to disperse our landings. There is a great need for higher speed landing craft. However, there is at present no new equipment in sight which will radically change amphibious operations.

23. Naval Weapons: The Navy recognizes that some change in ship design will be necessary for future construction. However, they have not yet decided the nature of major design changes except for submarine and anti-submarine vessels, and some changes which will definitely be made in the design of aircraft carriers. In 1956 some carriers will be available which will have a much larger gasoline capacity than present carriers and which will have flush type flight decks probably permitting the operation of planes capable of delivering atomic bombs. It is believed that bombers having a tactical radius of operation of 750 to 1000 miles will be operating from such carriers by 1956 and much greater radius with still larger planes or drone control is a distinct possibility. The Navy is working extensively on the development of anti-aircraft weapons and on the development of countermeasures to air attack and air weapons. It appears that naval bases and, in fact, any port facilities will be extremely vulnerable to attack by atomic weapons. The problem raised by radio-active water contamination of ships, harbor and port facilities is recognized and is under study but no solution, other than the partial one of dispersion, is now apparent.

24. General Summary: It appears that the most profitable targets for attack by new weapons, such as the atomic bomb and biological weapons, will be major vital areas, particularly industrial centers, communications centers,

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storage areas, port areas to include naval bases and possibly in some instances convoys or military concentrations. As a result of this, civil populations may experience attacks which would range from sporadic attacks with conventional weapons to atomic attacks or biological attacks designed to kill or incapacitate the inhabitants of large industrial areas. In planning against the next war we must, therefore, give great consideration to increasing the efficiency of our civil and military defense organizations, to the development of passive defense measures and to dispersing or placing underground certain key parts of our industries. All of this means that the military must initiate education of the civil population to our picture of the next war. This task is made more difficult by the inevitable charge of war mongering. However, there must be a considered and carefully planned campaign to educate and prepare our civil population, which should begin now. The education must extend over a period of time, in order to diminish the shock which would result from a sudden bald announcement of all that can be foreseen for the civil population in war of the future.

25. As regards land warfare, we believe our land forces will be organized and equipped for increased mobility and increased fire power. They will require much greater flexibility and reliability in communications in order to maintain control of dispersed mobile forces. The vulnerability of troops and equipment massed for amphibious operations will require dispersion of such operations and landings at many points instead of concentrated landings at one beachhead. Further, we believe a greater portion of anti-aircraft weapons must be available to protect troops, bases, cities and ports.

26. As regards air warfare, 1956 will not see the piloted aircraft supplanted by guided rockets or longrange guided missiles. Neither will 1956 see aircraft in quantity operating at supersonic speeds. Anti-aircraft defenses will probably be much more efficient. We must, therefore, concentrate beforehand on the development of effective countermeasures of all types. In addition, every effort must be made to develop parasite fighters or even aircraft aircraft-carriers to defend our very long range bombers. We reiterate the belief that

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air warfare in 1956 will be marked by a race between measure and countermeasure and that success in air warfare will depend to a very great extent upon our ability to provide effective countermeasures for enemy anti-air weapons.

27. We can see no great change in the basic pattern of sea warfare by 1956. The deep submerged high speed submarine and the developments that will take place before that time in torpedoes require that our Navy pay a great deal of attention to perfecting defenses against these weapons. As long as atomic bombs are scarce we do not believe they will be used against convoys at sea except in very exceptional circumstances. We believe there will always be land targets, the destruction of which would have more effect on an enemy's will and ability to resist than would the destruction of any target at sea. Defense of naval bases, seaports and industrial areas against attack by atomic weapons is, therefore, of much more importance than the defense of ships at sea against such attacks. However, ships at sea will be very vulnerable to attack by rockets equipped with seekers. The development of countermeasures against such weapons is essential.

28. In conclusion, it appears that war in 1956 would be more nearly total war, the people's war, than anything the world has yet seen. Conditioning of the minds of our civil populations to endure such a situation is recognized as a most difficult task and one that will probably not be accomplished unless the military assume the responsibility of initiating it. They should, therefore, make plans for it now and begin an educational program as early as possible. Further, countermeasures against weapons depending on radio, radar, television, infra-red, etc., for their accuracy and destructiveness will be more important in 1956 than ever before. Conceivably successful countermeasures could be the key to defeat of our enemies. The development of successful countermeasures is immeasurably facilitated by early knowledge of the radio or radar wave lengths the enemy is utilizing. For this reason, as well as for many others, successful intelligence is of more importance than ever before and no means of gaining information concerning the enemy's technical developments in weapons and allied equipment should be overlooked.

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29. Warfare in 1956 could very easily open with a stunning attack, either by sabotage or from the air or both, against our industrial system and consequently against the civil populations of our countries. We would probably be on the defensive for a while. Strong leadership, both civil and military, will be of paramount importance. Moreover, the war will develop and move more swiftly both on the battlefield and in the overall than ever before. Decisions will have to be made and implemented with minimum loss of time.

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11 November 1946

CAPABILITIES AND MILITARY POTENTIAL OF SOVIET  
AND NON-SOVIET POWERS IN 1956

THE PROBLEM

1. To estimate the capabilities and military potential of Soviet and non-Soviet powers in 1956.

ASSUMPTIONS

2. That a war breaks out between Soviet and non-Soviet powers in 1956.

3. That during the interim, none of the principal opponents have engaged in any war or have suffered economic depression of sufficient magnitude to materially reduce or affect their military potential or capabilities in 1956.

4. That the Soviet powers are the aggressors.

5. That the term "Soviet powers" includes the Soviet Union, Finland, Poland, Czechoslovakia, Hungary, Rumania, Yugoslavia, Albania, Bulgaria and Outer Mongolia; the term non-Soviet powers embraces the rest of the world. Of these, the U.S. and U.K. on the one side and the USSR on the other will be the only important military powers in 1956.

ESTIMATE AND DISCUSSION

6. See the following Appendices:

Appendix "A" - Discussion

Appendix "B" - USSR and Satellites

Appendix "C" - Non-Soviet Powers

CONCLUSIONS

7. The non-Soviet bloc will possess technical and quantitative superiority in all radically new types of weapons excepting possibly BW; the Soviet bloc technical equality and quantitative superiority in conventional land forces. The non-Soviet powers will be ahead of the Soviet bloc in aircraft development, particularly in long-range bombers and fighters (but not ahead in numbers of combat planes available), and far superior in naval power,

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8. The economic potential of the non-Soviet powers will initially be approximately twice that of the Soviet group but will be quickly and greatly reduced by the occupation of much of Eurasia by the Soviets. The principal non-Soviet powers will be more advanced technologically than the USSR. The Soviets on the other hand will probably be able better to mobilize physically and psychologically for an all-out war. Their initial capability for Fifth Column and sabotage activities will be greater.

9. The Soviets will be capable of mounting a long-range strategic attack or series of attacks against the United States with new weapons, carried principally by sub-sonic bombers. The Soviets will overrun the major portions or all of Europe, the Middle East and North China in the early months of the war and unless sternly resisted might be able to neutralize and possibly even attempt to occupy the U.K.

10. The overall Soviet vulnerability to non-Soviet strategic counterattacks with atomic bombs and other new weapons will be reduced by the probable unwillingness of the non-Soviets to direct such attacks against Soviet-held friendly territory.

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APPENDIX "A"

DISCUSSION

1. General.

A consideration of possible actions and forces available ten years hence can be nothing but an estimate based on past performances and current trends. The assessment of future capabilities of the USSR is a continuing process wherein maximum effectiveness is usually assumed regardless of cost to the Soviet economy. Despite its totalitarian nature, the USSR is still a nation founded upon a people whose personal welfare is directly relative to the status of the national economy.

The Soviet political system is essentially strong but because of the sharp angle of its command pyramid, it is essentially vulnerable. On a base of two hundred million persons is imposed the control by five to six million Communists. These are held in close check by half a million secret and security police. The pyramid is topped by the Politburo of less than a score of men, none of whom is young. Admitting that the Oriental mind is capable of and amenable to greater degrees of repression, nevertheless the possibility of internal Soviet collapse or major readjustment of aims must be recognized, no matter how remote such possibility might be.

Although it remains an always possible factor of critical significance, no cognizance is taken of the effect upon Soviet policy inherent in the death of Stalin during the interim period. Whereas the organization of the Politburo may be such as to insure the continuation of Stalinist and/or Communist aims in this eventuality, nevertheless the inevitable temporary loss of cohesion in the Soviet High Command must be regarded as a weakening influence in the event that it occurs prior to 1956. Such internal political disturbance, however, would be limited to the top party hierarchy and it is doubtful if the political cohesion of the Soviet people as a whole will be materially affected.

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Russia has been an impoverished nation for centuries. World War II did much to nullify the progress of previous Five Year Plans. The current plan envisions a maximum increase in producers goods and a minimum increase in consumers goods, resulting in a continued unsatisfactory standard of living. In ten years, however, the fatigues and strains of World War II will be largely dissipated and an uninterrupted development of the current Plan will go far in placing USSR production on a relatively higher level. Propaganda based on Marxist dogma and Soviet Nationalism will assume the loyalty of a sizeable majority of the people, while stringent police control will assure discipline of the remainder. Although there would be little enthusiasm for war, the Soviet population would be resigned to it and probably could be convinced that their country was fighting a defensive war.

2. Nature of War in 1956.

It is considered that a war in 1956 would entail commitments substantially as follows:

a. The Soviet bloc would include the USSR and its satellites, Albania, Bulgaria, Czechoslovakia, Hungary, Poland, Rumania, Yugoslavia, Finland and Outer Mongolia.

b. The non-Soviet bloc would initially include, in addition to the U. S. and the British Commonwealth, limited material support from the nations of the Western Hemisphere and support of questionable endurance from most of the nations of Western Europe. China would be friendly but of little material assistance and would rapidly lose a major part of its northern area to the Communists.

Supporting each side would be numerous satellite countries, drawn into the orbit of the major protagonists through geographical contiguity, possession of essential raw materials or ideological affinity. Some elements of war potential, such as the ability to employ on a remunerative scale certain new weapons, will be a capability only of the major combatants; other types of war potential, such as availability of critical raw materials, could constitute an important element of military potential of the lesser countries.

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The early course of the war, which would involve Soviet conquest or occupation of many countries not initially satellites of the Soviet Union, would alter the over-all balance in military potential between the Soviet and non-Soviet powers.

The Soviets will attempt to destroy the non-Soviet powers' ability to wage war. The U.S. and U.K., in that order of importance, are the countries which would have the greatest ability to oppose the Soviet bloc effectively. The Soviets therefore will direct their major strategic blows against these two countries.

There are two main efforts initially open to the Soviets. An initial aggression in the form of a decisive surprise attack or rapid succession of attacks in employing large numbers of all available types of long-range weapons might seek to eliminate or cripple U. S. war potential at the outset. Such an all-out assault would involve grave risks if it did not at least accomplish widespread disruption and irreparable damage.

Another course would be the overrunning of all of Eurasia, the attempted neutralization of the British Isles, and the development of bases with a view to a later attack on the United States. The Soviet conquest of Eurasia could be accomplished expeditiously without the employment of the radically new types of weapons, and therefore would throw the onus of introduction of so-called inhuman weapons on the non-Soviets if they chose to use them. Such a course would make immediate counteraction by the non-Soviet bloc with atomic and other new strategic weapons a matter of some embarrassment. Employment of radically new weapons against Soviet territory might not suffice, and their use against the Soviet forces and economic facilities in countries seized by the Soviets would do much more harm to the inhabitants of those countries than to the Soviets themselves. Furthermore, on the parallel of the use of gas in World War II, the decision to initiate atom bomb attacks by the non-Soviets might meet with resistance from the British, who could then expect immediate and telling counter-attack from the Soviets.

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The Soviets could reckon, at the same time, that the non-Soviets might shrink before the task of undertaking a land offensive against a power astride the Eurasian land mass and controlling its vast resources.

Whether or not the Soviets made an initial all-out long-range attack against the United States, it seems certain that they would overrun Eurasia. They would simultaneously initiate a strong effort to neutralize, if not also to occupy, the British Isles.

Maximum capabilities of the Soviets in the early course of a Soviet aggression in 1956 can therefore be conceived of in these terms:

(1) An initial all-out attack or series of attacks on the United States with long-range weapons (chiefly aircraft), using atomic bombs, biological warfare, and chemical warfare, and coordinated with a maximum employment of sabotage.

(2) Advances of ground troops into Western and Southern Europe, the Middle East, and China. These advances to be simultaneous if possible, otherwise priorities for these advances to be in the order given.

(3) Employment of submarines to harass sea communications from the U. S. to the U.K. and to forward bases in other parts of the world.

(4) Partial neutralization of the U.K. and an attempt to seize the British Isles.

(5) Eventual penetration by the Soviets into Southeastern Asia and Africa.

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APPENDIX "B"

USSR AND SATELLITES

1. Ground forces.

a. General. The Soviets will possess a large, efficient ground army of highly mobile units fully equipped with modern types of conventional weapons and with adequate ground-support aviation. They will be able greatly to expand their armed forces in a rapid mobilization. Since the role of radically new weapons will not be fully established, the Soviets will not set aside their present superiority in numbers of ground forces, and they will endeavor to have qualitative superiority vis-a-vis prospective opponents. An initial objective of a global Soviet aggression will be seizure, by ground forces using conventional methods, of all adjacent territories of strategic value, including Western Europe, the Middle East, and North China. It is possible that this policy may lead to an over-commitment of resources to the ground forces, to the detriment of research and development of new weapons and techniques.

b. Strength. The Soviet standing armed forces will average between 3 and 4 million during the period prior to hostilities. Reserves trained in the most recent technical and tactical procedures will approximate 6 or 7 million, with an additional 8 million whose World War II experience will be supplemented by refresher training. Almost all adolescent and adult citizens will have had some type of training (first-aid, air raid warden, marksmanship, BW and CW passive defense, parachute and glider, etc.) of value in a total mobilization for war in unlimited depth.

The armed forces will possess cadres of approximately 300,000 career officers and 600,000 NCOs. Officer candidate schools and schools of the arms and services have

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sufficient capacity to assure very large reserves of well-trained reserve officers, possibly as many as a million by 1956. Training in the armed forces through courses, unit exercises, and maneuvers will have been intensive, and morale, professional competence, and general standards will be at a high level.

c. Mobilization. The Soviets will be capable of rapid mobilization of personnel for regular military units as well as for all classes of auxiliary service and home defense organizations. Adequate professional cadres, large stockpiles of materiel, and a well-ordered mobilization machinery will assure the former, while the latter will be expedited by a system of self-contained mobilization by economic units, such as factories and collective farms. The Ministries of Signal Communication, Roads and Railways, and the Civil Air Fleet can be militarized and made effectively operational as military agencies within a matter of days.

Requirements for the purely combat elements of the ground, air, and naval forces will at least initially be far less than in World War II. Military technical and service personnel requirements will be proportionately greater. Active and passive defense organizations in the interior will absorb great numbers of personnel, as their role will be enormously expanded over that in World War II.

d. Tactics. It is not anticipated that ground tactics will change fundamentally from those of World War II. The impact of radically new instruments of war will modify but not radically revise Soviet concepts of ground war. In general, Soviet ground forces by 1956 will be almost entirely motorized. Logistical support will be strengthened, and the Soviets will at least partly have substituted heavy machinery (bull-dozers and the like) for human muscle in

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military engineering procedures. Fire-power will be greatly strengthened, particularly with short range rockets and improved artillery, and materiel of all types will be plentiful.

Infantry will still be numerically the largest component. It will possess a versatile arsenal of recoilless weapons, mortars, rockets, mobile guns, and automatic weapons. Most infantry units will be motorized and will contain armor. The airborne infantry will be greatly expanded and will be prepared to play an aggressive role. Soviet infantry will not, as was sometimes the case in World War II, be a slow-moving mass of hastily trained, readily expendable semi-literates.

Artillery, at present technically the most competent ground arm, will perhaps no longer, as Stalin defined it several years ago, be the God of War, but its role will still be very important. Significant developments in rockets, conventional guns, mortars, new types of ammunition, fuzes and instruments should assure the Soviets substantial qualitative parity with the U.S.

In the face of new high-velocity antitank guns, improved types of the Panzerfaust, and possibly other weapons, the role of armor may be more restricted by 1956 than it was in World War II. Until this is clearly demonstrated, however, the Soviets will continue to develop, produce, and stockpile their tanks. Principal developments will include improved armor steels, more efficient motors, greater obliquity in exposed surfaces, and new ordnance. Changes in tactical employment will be dictated chiefly by technical developments of other arms.

e. Home defense units. By 1956 the Soviets will have organized a vast system of home defense units whose role will be to minimize the effects of new weapons directed

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against the deep interior. The MVD will probably control these units, including AA defense, watcher nets, mobile military units to combat enemy airborne efforts, and medical and engineer teams. Although many of the home defense people will be part-time workers, very great numbers will be mobilized on a full-time basis, and it is possible that the total number of persons required for home defense may exceed that required for offensive operations.

f. Satellite forces. The Satellite countries of the Soviet Union (Finland, Poland, Czechoslovakia, Hungary, Rumania, Yugoslavia, Bulgaria, Albania, and Outer Mongolia) will have active armed forces of an approximate regular strength of 1,250,000 by 1956, with trained reserves of several million men. Perhaps 30 percent of this manpower would be available for offensive ground operations. They would presumably be employed by the Soviets for secondary actions in support of the main initial drives. Efficiency, loyalty, and equipment will be neither uniform nor in general of high quality. Latent antagonism of sizable elements of the satellite peoples toward the Soviet Union and toward their satellite neighbors may markedly lessen their value as active allies of the Soviet Union. Aggressive, well-conceived disruptive propaganda among these peoples would further greatly reduce their value as sources of military support for the Soviet Union.

## 2. Air Forces.

a. USSR. The USSR is granted the capability of building a force of B-29 type aircraft in 1948. In 1949 the Soviet long-range bomber force could reach a strength of ten regiments equipped with these aircraft (a total of <sup>400-500</sup> aircraft); and by 1952 a two-for-one reserve could be accumulated. Attainment of this objective would require the employment of only half of the production capacity actually devoted in 1944 to all bomber types.

UK estimate  
12,000 of a type  
approx. B-29 &  
3500 of B-29 character  
by 1956.

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The USSR will have reached the desired peak of its development in reciprocating engine-powered aircraft prior to 1956. On the thesis that Russia is five years behind American development in this line, the Soviets could have a force of B-36 type aircraft operational on that date. However, it is not considered that Soviet production will be committed to aircraft of this type. By 1956, bomb load capacity will have ceased to be a controlling factor in Soviet offensive intentions contra the United States. Range of 5,000 miles would permit bombing of any important target in the United States from present Russian bases.

Whereas the pre-mobilization strength of the Soviet Air Force is not expected to be substantially above 1946 figures, its composition should be radically different. All fighters can be jet propelled and some may be capable of trans-sonic speeds. Long-range bombers may be jet propelled; but range and speed will supersede load as factors. All bombers should be capable of reaching targets in the United Kingdom and long range types the United States from present or readily accessible bases.

Airborne forces. It is not believed that airborne forces alone could or would be employed for major operations against the United States. Development of long-range transports will have made possible the commitment of large numbers of paratroops and airborne forces, but logistical considerations inherent in the distances involved would preclude effective resupply and reinforcement. Rather it is believed that such forces would be employed only after careful preparation of selected targets by other weapons.

Assuming that the Soviet transport fleet will be stabilized at 10,000 aircraft, at least a part of these could be replaced by four-engine transports prior to 1956. A reasonable air-lift estimate would be 200,000 to 300,000

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paratroops. Denied fighter escort, attrition to these forces if employed as an assault echelon would certainly be heavy.

A continuing capability of the Soviets is represented by small sabotage and demolition squads which might be dropped at will anywhere in the United States, United Kingdom, Canada, and Africa.

b. Satellite Air Forces. General levels of training, quality of equipment, and technical advancement of the satellite air forces will be of such a low order as to preclude their playing an important part in a war in 1956. None of these countries will be able to produce any substantial quantity aircraft component parts, although some may possess small airframe assembly works.

3. Naval forces.

a. The Soviet Navy in 1956. Study of the probable Soviet strategic position in 1956 indicates that they will have need of Naval power to exploit their initial successes, although a navy is not necessary to achieve their objectives on the Eurasian land mass. Soviet political leaders have stated that the USSR must have a powerful Red Navy. However, the demands for rehabilitation in the next ten year period and the necessity of modernizing other Red arms will compete with the development of the Red Navy. Consequently, although Soviet Naval thought may be conscious of their naval needs whether they are fulfilled or not is dependent on the decisions of political leaders who to date have shown no indication of being particularly naval minded.

Because the Soviets are inclined to hold to those things which they have found successful, it seems probable that the Red Army will receive the greatest attention followed by the Soviet air force and that the Navy will be a poor third, although modern submarines will be accorded high priority. This poor position of the Navy will be

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emphasized by the magnitude of the job of getting the Soviet shipyards back into production. Because of this, the Soviet will probably undertake naval building which will not put too heavy a burden on their economic system and at the same time offer the most profitable counter to the sea power of their most probable enemies, Great Britain and the United States. Consequently, submarines and light craft will probably be emphasized.

In connection with the Soviet naval building potential the following tables are pertinent:

SOVIET VERSUS U.S. WARSHIP CONSTRUCTION TIMES

<u>United States Warship Production</u>	<u>Est. for USSR</u>
CV Ave. time to build 3 years (Peacetime) 13 mos. (record wartime)	8 years (for first unit)
Amt of steel used for CV 9 25,350 tons (light ship)	
BB Ave. time to build 4 years (peacetime) 3 years (wartime)	5 years
Amt of steel used for BB 69 57,534 tons (light ship)	
CA Ave. time to build 3 years (peacetime) 2 years (Wartime)	3 years
Amt of steel used for CA 139 15,970 tons (light ship)	
DD Ave. time to build (short hulls type) 24 mos. (peacetime) 10 mos. (wartime)	2 years
Amt of steel used for DD 692 2,045 tons (light ship)	
SS Ave. time to build 30 mos. (peacetime) 11 mos. (ave. wartime) 6 mos. (record wartime)	2 years
Amt of steel used for SS 285 1,455 tons (light ship)	

The amount of steel used is indicated under U.S. production as it was felt that the Soviets might not be able to produce enough to take care of all their needs plus their shipbuilding program. However, a glance at their steel production plans and past performance indicates that they can and will produce sufficient steel to take care of all planned needs.

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METALLURGY OF USSR. FOURTH FIVE YEAR PLAN

Production in thousands of tons (metric)

	<u>1940</u>	<u>1945</u>	<u>1950</u>
Pig Iron	15,000	9,000	19,500
Steel	18,300	13,800	25,400
Rolled Steel	13,100	?	17,800

Fulfillment of second five year plan

	<u>1932 Actual</u>	<u>1937 Plan</u>	<u>1937 Actual</u>	<u>% Fulfillment</u>
Pig Iron (Mil met. tons)	8.2	16	14.5	85%
Steel (Mil met. tons)	5.9	17	17.7	106%

SHIPYARDS IN THE USSR CAPABLE OF BUILDING  
WARSHIPS AND NO. OF BUILDING WAYS

(Number of building ways for submarines is not indicated)

	<u>ARCTIC</u>	<u>BALTIC</u>	<u>BLACK</u>	<u>FAR EAST</u>
BB 0		Kronstadt 1** Leningrad 4**	Nickolaev 1*	Vladivostok 1** Komsomolsk 1**
CV 0		Kronstadt 1* Leningrad 4*	Nickolaev 1*	Vladivostok 1** Komsomolsk 1**
CA Molotovsk 1 Vaenga 1**		Kronstadt 1* Leningrad 2*	Nickolaev 2* Sevastopol 1*	Vladivostok 1** Komsomolsk 2
DD Murmansk * Polyarnoe * Vaenga ** Archangel Molotovsk		Kronstadt * Leningrad *	Sevastopol *	Sovgavan ** Port Arthur ** Komsomolsk Vladivostok
SS Murmansk ** Polyarnoe Vaenga * Archangel Molotovsk		Kronstadt * Leningrad	Sevastopol *	Sovgavan ** Port Arthur Komsomolsk Vladivostok

Working at present

\*Destroyed but being reconstructed, ready to build by 1952  
Leningrad now building 1 BB.

\*\*Probable yards for future development, building by 1952

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The following is a table of Soviet optimum potential naval strength based on the above considerations:

	<u>SOVIET FLEET IN 1956</u>				
	<u>TOTAL</u>	<u>ARCTIC</u>	<u>BALTIC</u>	<u>BLACK</u>	<u>FAR EAST</u>
BB	11	1	2	2	6
CV	6	1	2	1	2
CVL	0	-	-	-	-
CVE	0	-	-	-	-
CA	30	8	8	6	8
CL	6	-	1	3	2

Recent intelligence indicates that the Soviets have made no visible progress to date in repairing and resuming construction in their damaged shipyards in the vicinity of Nicolaev and Leningrad. Unless highest possible priority is accorded to naval construction it is improbable that outlined Soviet strength will be reached by 1956.

Present indications are that the Soviets are showing great interest in the German type XXI submarines. Out of 20 vessels of this type known to be available to them, it is thought that they have between 2 and 8 operational. They are busily engaged in recruiting German crews for carrying out further exploitation of this type of submarine. Because of the fact that type XXI is a sectional construction whose sections were built all over Germany and because German plans for this type of building were carefully worked out and are available to the Soviets, it is considered that in 1956 the Soviets can have over 300 of this type of submarine, dependent on the vigor with which they press their program. As has been stated before, there is not enough intelligence available to indicate the true scope of the Soviet program.

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4. New Weapons.

With the Soviet Union's limited technological advancement in many fields, and the urgent necessity of rehabilitating and improving the economy in general, it is unlikely that the Soviet Union could develop to the point of proven practicality and manufacture in significant quantity more than one or two radically new weapons within the next ten years. It is believed that priority will be given to the production of atomic bombs, and that this effort will utilize the greater part of Soviet scientific and precision instrument capabilities for most of this period.

It is not likely that any of the Satellite nations of the Soviet Union will have developed new types of weapons by 1956.

a. Atomic weapons. It is estimated that the Soviets will have the atomic bomb in active production sometime between 1950 and 1953. By 1956 they might have approximately 100 bombs available. It is unlikely that the Soviets will have made much progress in the development of "atomic dusts", since atomic explosives are more effective as bombs.

Assuming the U.S. rate of production remains unchanged, the U.S. should have many times as many bombs as would the Soviets. In view of this discrepancy, it is possible that the Soviets would deem it unprofitable to employ atomic bombs in an initial surprise attack on the U.S. and Great Britain unless they considered it possible to deliver a knockout blow which would preclude counteraction. The decidedly inferior Soviet stock of bombs would lay the Soviet Union open to potentially more damaging counterblows than the attack which it might make. An initial expenditures of a sizeable part of their stock of atomic bombs, if it did not produce decisive results, would leave the Soviets in an even more unfavorable comparative position with regard to this weapon, and at the same time would release their opponents from any moral constraint in the use of it and other indiscriminate weapons.

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The USSR has and will continue a good PT boat and similar program. By 1956 they should have at least 800 to 1,000 PT boats in reserve or operation.

b. The Soviet Fleet Air Arm. The trend of the Soviet Fleet Air Arm will follow very closely that of the Soviet Navy. The development of improved type planes will be almost wholly dependent on the programs made by the USSR Air Force.

c. Amphibious Warfare Potential. Soviet amphibious warfare potential in 1956, unless a large program of construction of amphibious equipment is undertaken, will have the capability of shore to shore or coastal movement of men and supplies against minor opposition but will still be incapable of major overseas operations. While, as has been implied, these capabilities can be increased by the pursuit of a vigorous amphibious program, it is not believed that their economic and industrial capabilities during this period will allow them to carry out such a program without sacrificing attainment of other goals which they consider more important.

d. Soviet strategic Naval concepts. To date Soviet Naval strategic thinking seems to be based on Czarist concepts, and Soviet experience in World War II. The main mission of the fleet is to act as a seaward anchor for the Red Army and to conduct both surface and subsurface raids against enemy commerce from near bases, and to assist the projection of the operations of the Red Army. The Soviet Navy will continue to be deployed in the Barents, Baltic, Black Seas and in the Pacific. Emphasis will be placed on improving the internal communications between the Barents, Baltic, and Black Seas, particularly for submarine and light craft. The Arctic waterways will be developed.

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b. Guided missiles. For the next five years time will favor the Soviets in the field of guided missiles. Thereafter time should distinctly favor the United States in direct relation to its continuing awareness of the significance of guided missiles.

(1) The VE-Day partition of Germany placed most of the German V-weapon production facilities and engineering personnel in the Soviet zone of occupation. This has given the Soviets a considerable initial advantage in the production of V-1 and V-2 type missiles together with improvements of these basic weapons. It is within the realm of possibility that the USSR can develop a guided missile having a range of 3,000 miles of 1956, but it does not appear such a missile would have an accuracy or a warhead which would make it militarily effective. Possession of the World War II basic designs and production facilities, which will expedite accumulation of stocks of these weapons in the immediate future, may prove a deterrent to long-term developmental effort at improvement or invention of radically different types.

(2) The majority of the top German scientists and researchers who were responsible for the development of World War II guided missiles are now in the employ of the United States and Great Britain. In addition to imported talent, the Democracies possess the world's greatest supply of ideologically-free technological experts. Together they possess the capability of developing missiles far in advance of the weapons which Russia inherited from Germany, or might develop independently. Thus, time will ultimately favor their efforts, which can be backed by the two most industrially advanced nations in the world. This advantage should be substantial and apparent by 1956.

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c. Other weapons. Biological and chemical warfare agents represent capabilities which may be developed far beyond present standards by 1956. One of the primary advantages of such warfare is that it may, to a considerable degree, be waged surreptitiously by saboteurs emplaced prior to the outbreak of hostilities. A serious initial advantage might be gained by the employment of a relatively small number of agents.

Russia is currently committed to a program of encouragement and public recognition of scientific achievement in all fields. Bacteriology and chemistry are among the subjects being most actively explored. Owing to its vast size, the USSR is well able to produce and test such weapons with comparative security.

A factor which in World War II proved a strong deterrent to their employment is the probability of retaliation in kind. Unlike explosives, biological and chemical weapons are not instantaneous in effect. The capacity of a defender to retaliate may be little affected by initial attacks. Since sanitary conditions and medical standards in Russia are inferior to those in the United States, this type of warfare might prove a boomerang if begun by the Soviets.

(1) Bacteriological warfare. By 1956 the Soviets should have developed extremely dangerous BW agents and excellent methods of disseminating them. BW lends itself to employment either as a large-scale strategic weapon or as a sabotage agent.

For decisive employment of BW agents in large-scale strategic attacks, sustained air superiority over the target area and repeated applications are necessary. Simultaneous employment of various BW agents, atomic bombs, and possibly CW agents in a large-scale surprise air

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attack would compound the effectiveness of each of these types of weapons, and might conceivably deal such a paralyzing blow to the country attacked as to render it incapable of further resistance. It is believed, however, that the Soviets would not have the initial capability in 1956 of employing BW, taken by itself, against the United States on a scale sufficient to produce serious lasting damage. Against the U.K., however, they might possess this capability. Employment of BW by the Soviets on the Eurasian land mass could lead to uncontrollable epidemics which might spread to Soviet territory.

BW would be available to the Soviets as a sabotage weapon of great harrassing and psychological effect, but it is not envisioned as being the decisive factor in a war in 1956.

(2) Chemical warfare. As with BW, a strong, versatile air force is a prerequisite for an extensive CW strategic and tactical potential. The Soviets will be capable in 1956 of employing CW weapons against the U.K. in the early stages of the war, but will not then be able to use them with any decisive effect against the United States. Developments by the Soviets in CW will probably include production of the nerve and blood poisons (GB and GD) developed by the Germans, improved incendiaries, new smokes, and to a lesser extent rockets charged with chemical agents. Considerable progress in the development of mechanized flame throwers can be expected. In general, Soviet CW weapons will have greater potentialities against enemy military personnel in the field than against the enemy's population and industry.

The role of CW agents as sabotage weapons is not likely to change radically in the next 10 years.

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5. Fifth column and sabotage. The Soviets will control organized bodies of absolutely loyal adherents in most foreign countries. These groups will be able, prior to hostilities, to exert considerable indirect influence on public opinion within the U.S. and the British Commonwealth to foment strikes, and to conduct the other activities harmful to national, political, or economic well-being. A serious economic depression before 1956 would increase their effectiveness. Immediately upon the outbreak of a war of Soviet aggression, however, the influence of the Soviet Union's friends and agents in the U.S. and the Commonwealth would be virtually nullified.

Soviet-controlled groups, especially personnel employed before hostilities in espionage, would have the capability, at the time war breaks out and for a short time thereafter, of carrying out acts of sabotage within the U.S. and the Commonwealth. The effectiveness of sabotage would be greatest if it were conducted in conjunction with an all-out strategic attack. Employment of BW by saboteurs could produce serious effects on the inhabitants of populated centers and possibly on the food supply. A recent FBI report estimated that there were a substantial number of Communists in the United States. A small portion of these are almost certain to be sufficiently ideologically reliable to provide agents for these and other sabotage operations. Soviet sabotage alone, however, would not have any major influence on the aggregate war potential of the U.S. and the Commonwealth, provided adequate precautions are continued to protect extremely vital installations and facilities such as communications, atomic bomb plants, etc.

6. Economic potential. In 1956, as now, all elements of the Soviet economy will be state-controlled. Military considerations will play a predominant role during the next ten years in the rehabilitation and development of Soviet industrial, raw

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material, and agricultural resources. Multiplication of the large machine-building and metallurgical industry complexes will be partly achieved; regional autarchy, even when it involves uneconomic investment, will be emphasized because of its military value; and construction of certain strategic railways will take priority over normally more important lines.

By 1956 the Soviets should have reached substantially higher levels of industrial efficiency than now, and they should have been able to introduce a fair degree of mechanization in certain important industries which now depend on masses of prison labor. The general level of worker productivity will still be appreciably lower than in the U.S., and the military advantages of state planning over a free economy will be partially counterbalanced by the incubus of an unwieldy bureaucracy and by a reluctance of individual to assume responsibility.

The present grave weaknesses of the transportation system will be overcome. By 1950, after fulfillment of the Fourth Five Year Plan, the rail net will be somewhat more extensive and in better condition than it was in 1939. By 1956 the railways should be in a position to meet initially the industrial and military requirements of the Soviet Union in an all-out global conflict. Over-all transportation capabilities will be further enhanced by an increased emphasis on the development of the road net and of inland waterways, and by a great increase in the number of motor vehicles.

Inferior industrial capabilities vis-a-vis the advanced non-Soviet powers in the mass production of machine tools, instruments, and various other items technologically difficult to produce will be in a large measure balanced by the Soviet capability for rapid and complete conversion of the national economy to the support of an all-out war effort. In certain

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respects the Soviets will be better prepared initially to produce primary types of war material than their principal opponents.

The Soviets' position with regard to the supply of food will be inferior to that of the non-Soviet powers. The danger of acute undernourishment of the Soviet controlled populations will probably not materialize, but rationing may be sufficiently stringent to produce appreciable effects on worker morale and productivity.

By 1956 the Soviet satellites will have established more or less complete government control of industry and transportation, and the transportation of these countries to a wartime economy will be relatively simple. Certain essential basic materials such as grain, oil, and bauxite will materially supplement Soviet supplies. In a long conflict characterized by extensive mutual attacks by the major belligerents on each others' important industrial centers, the Soviets might decentralize minor elements of their industry to the satellites.

If, as seems probable, the Soviets overrun the greater part of Eurasia early in a global conflict in which they are the aggressors, they will be able to deny important economic resources to the non-Soviet powers, and to a lesser extent, these resources will accrue to them. German coal, French and Spanish iron, Turkish chrome, and certain rare metals in short supply to the Soviets at present, as well as major industrial installations, will fall into their hands. On the other hand, it is unlikely that they themselves will be able for some time to obtain oil from the petroliferous areas of the Middle East which they will be able to deny to the non-Soviet powers.

Since the Soviets will not by 1956 have reached their ultimate goals in the decentralization of industrial complexes, they will still be vulnerable in several respects to attacks directed against their economy. Considered in terms of all factors comprising military potential, the Soviet bloc could

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be most damaged if the following areas or centers, in the order named, could be denied it or rendered economically ineffectual: Moscow-Gorki, Caucasus, Ploesti Oilfields, Ural Industrial Area, Middle Volga Valley, Don-Dnieper Basins, Baikal Area, and Leningrad..

Manpower. In 1956, the non-Soviet powers will outweigh the Soviet Union and its satellites in total population by a ratio of six to one.

This ratio, however, is somewhat misleading since it does not take into account the quality of population. Obviously, the African native population would be little of an asset to the non-Soviet powers. To make the comparison more meaningful, world populations may be divided into three quality - classes, more or less arbitrarily defined as:

Class I - populations with modern skills useful in total war or capable of acquiring such skills in a relatively short time;

Class II - populations without modern skills but probably capable of being trained to acquire them unless this war were over very quickly.

Class III - populations without modern skills and probably not capable of acquiring them for the duration of the war.

On this basis, the non-Soviet powers still have a decided advantage, although it drops considerably from the advantage based only on total population.

In Class I, populations, which in a short war would be the economically most useful ones, the non-Soviet advantage is estimated at five to two (25 to 10). In Class II, populations fully useful only in a longer war, the advantage rises to nearly four to one (39 to 10). In Class III, populations - likely to be of very little economic value - the ratio rises to almost nine to one (87 to 10).

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The very young and the old would not be of great use in a total war, hence, a comparison of populations within the productive age-groups is useful. In Class I, males between the ages of 15 and 49, the non-Soviet powers will have a five to two (25 to 10) advantage, in Class II, males, an advantage of 29 to 10, and in Class III, males, an advantage of 88 to 10. In the case of females of these ages, the advantages are slightly less than for males - Class I - 23 to 10; Class II - 33 to 10; and Class III - 73 to 10.

If the Soviets controlled all of Eurasia, however, they would have not only a tremendous over-all advantage in population odds, but also a 4 to 3 advantage in Class I population.

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NON-SOVIET POWERS

1. General. Over-all military potential of the non-Soviet powers will initially be greater in almost every respect than that of the Soviet bloc. Productive capacity of essential war industries will be at least twice as great. Technology will be more advanced. Developed military resources will be as great or greater with the exception of ground forces. This initial advantage of the non-Soviet powers will be greatly reduced if, as is likely, the Soviets overrun the greater part of Eurasia during the early months of the conflict.

2. United States. Prognostication of U.S. military potential lies beyond the scope of this paper.

3. British Empire. By 1956 the Dominions and colonies will contribute a larger proportion to the aggregate military potential of the British Empire and commonwealth than they did in World War II. The potential of the U.K. will remain static for the most part; in some respects it may diminish and in almost all respects it will diminish proportionately in comparison to that of the Dominions, the U.S., and the Soviet Union.

a. Armed forces. British Empire armed forces during the period prior to a Soviet global attack in 1956 will consist of relatively small, efficient regular establishments.

Mobilization potential of the U.K. and Dominions (excluding India) would be of the order of 6,000,000, of whom 4,000,000 might be furnished by the U.K. Mobilization will not be carried out as rapidly as in the totalitarian countries of the Soviet bloc, and equipment will possibly suffice for only about half the total available manpower.

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The effectiveness of British armed forces will depend must on technical advancement in new weapons and on the quality of personnel than on numbers. Considerable experimentation is being done in Great Britain on standardization and improvements of vehicles and small arms. It is expected that experimentation will be completed and the standing army 100 percent re-equipped with new equipment by 1956. In addition it is expected that approximately 50 percent reserves will be maintained to allow for rapid mobilization.

How the impending changes in India's political status will affect the war potential of her armed forces and their availability to the British Empire is difficult to predict. The maximum mobilization attainable, however, will probably not differ greatly from that achieved in World War II, when 2,100,000 troops were mobilized. Equipment would have to be furnished almost entirely from the outside. Indian troops vary as to combat efficiency and loyalty. Assuming the British still exercise some degree of control of India's armed forces, India could furnish several hundred thousand fine troops capable of fighting a 1946-type of war.

b. Economic potential.

(1) United Kingdom. Because of the great reduction in Britain's overseas capital, she will not again be able to finance another war effort as great as the last. Over a period of years, Britain's slowness to modernize her industrial equipment and to improve her production methods has resulted in reduced output. The crux of Britain's industrial problem is her manpower shortage. For this reason, it is very doubtful if the British industrial potential will be greatly increased by 1956. Her primary objective at the present time is to rehabilitate her foreign trade, which must be raised 75 percent

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in order to equal the pre-war volume. Consequently, Britain's exports will have to be maintained at a fairly high level in order to finance a major part of her food and raw materials requirements for the next few years. The merchant marine in 1956 will equal or exceed present size, and will consist largely of modern ships.

(2) Canada. Because of the expected growth of all types of manufacturing, the discovery and development of new resources (among them iron, coal in Quebec, and radioactive elements in Ontario and in N.W. territories), and great capacity for surplus food production, Canada's 1956 economic contribution to a war effort would be substantially greater than in World War II.

(3) Australia and New Zealand. Besides making important contributions of primary products, Australia and, to a considerably lesser degree, New Zealand may be expected to increase output of manufactured products, especially in the aircraft and shipping industries.

(4) The Union of South Africa. The Union's contribution to the industrial potential of the Empire consists primarily of the following minerals: gold, industrial diamonds, coal, manganese, chrome, asbestos, copper, and iron. With the exception of ISCOR (Iron and Steel Industrial Corporation), where a great variety of steel products are being made on an increasing scale, South Africa's manufacturing industry will remain relatively unimportant.

(5) India. The extent to which India would plan an active role as an economic component of the British Empire in a war in 1956 is uncertain. Before the outbreak of World War II India was rated eighth in the world in industrial output. With excellent iron ore deposits and sufficient coal resources, India has had the basic materials for the development of large-scale industry.

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Since India is largely dependent on foreign capital and lacks important machine-tool industries, she will have great difficulty in achieving an actual increase in large-scale industries. Though aluminum production was started in Travancore during the war and aluminum ingot was produced in sufficient quantities to satisfy war requirements, the aluminum industry is not expected to reach large-scale importance for some years. India's industrial output dropped during World War II, partly due to the lack of sufficient skilled labor and the declining importation of the necessary capital goods from foreign countries. With sufficient foreign capital, India's industrial output can increase above its prewar level, particularly in the production of iron and steel. With limited oil resources India is expected to remain dependent on outside imports to maintain her petroleum needs. By 1956 it is unlikely that India's deficiency in capital equipment will be overcome to the extent of increasing its production capabilities more than 20 percent above its present level.

4. Latin America.

a. Armed forces. The estimated combined total of 600,000 armed forces, plus 1,200,000 in trained reserves, could furnish units for line-of-communications or limited combat duties. Further, many valuable air bases would be available. The quality and quantity of troops, bases, strategic materials and moral support will depend to a great extent on (1) successful completion of the U.S. hemispheric training and defense plans and (2) the degree of redirection of Argentina's politico-economic influence in South America to support a war effort.

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b. Subversive activity. There probably would be, in the initial phases, a dislocation of various national economies induced by communist-inspired strikes and sabotage. All governments would restore order promptly but not before some appreciable damage had resulted.

c. Economic potential. Ambitious plans for industrialization, promulgated in a number of Latin American countries, are not expected to have materialized by 1956. The continent of South America is a rich treasure-house of strategic materials, but production will not have reached a peak within ten years. Copper production, currently amounting to roughly a quarter of the world's total, will remain important, as will the production of tin.

Availability of strategic materials will be conditioned by the following factors: (1) limited transportation facilities; (2) the announced intent of some Communist factions to support the Soviet Union against their own governments in case of "imperialist war"; and (3) a possible reluctance on the part of Argentina to cooperate with the United States.

##### 5. China, Japan and Southeast Asia.

a. Armed forces. In 1956 the armed forces of the countries in these areas will be of little initial value to the non-Soviet powers. Assuming China is no longer divided by civil strife, the armed forces will have a strength of approximately 60 divisions and 1,000,000 men. Assuming Japan has no armed forces, she will not be capable of furnishing trained personnel for a sizable army, since the youngest 10 age classes will have received no military training. The armed forces of French Indo-China, Siam, and Malaya will be negligible. The Philippines will have a reasonably efficient army of 150,000 men organized into 10 divisions and suitable only for home defense. A possible, equally strong force in the Netherlands East Indies will also have only defensive capabilities. Great reserves of untrained manpowers will be of limited military value.

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b. Economic potential. Even assuming that the present internal conflict in China will be over in 2 or 3 years, and that considerable foreign capital and technical assistance is made available to China, that country's economic potential in a war in 1956 will be of little military significance. Industry in Manchuria, now largely inoperative, will be only partially restored, and will fall into Soviet hands in the early days of a war in 1956. Management and labor will be deficient in training and experience in modern industrial methods.

Since Japan may be stripped of facilities for heavy industrial production and manufacture of strategic materials, her contribution to the non-Soviet powers in a war in 1956 will be slight.

The military - economic potential of the countries of Southeast Asia will be measured in strategic raw materials. By 1956, rehabilitation of the rubber and tin producing areas should assure at least pre-war levels of production, assuming adequate prices and markets. At that time, Malaya, the NEI, Siam, and French Indo-China together produced 220,000 long tons of rubber (89 percent of the world's production) and 150,000 long tons of tin (63 percent of the world's production) annually.

6. Near and Middle East.

a. Armed forces. Assuming political and territorial factors remain roughly as they are today, Turkey will probably be able to offer stubborn resistance for several months against an aggression by the Soviets in 1956. Greece, Iran, Afghanistan, Iraq and the other countries of the Near and Middle East will not possess armed forces capable of putting up more than a token resistance.

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b. Economic potential. Middle East oil and Turkish chrome are the principal strategic economic resources of this area. The latter would become available to the Soviets; the former would not be immediately available as the U.S.-British proprietors would thoroughly destroy production and processing machinery.

7. Western Europe. Whether or not Western Europe offers effective military resistance to an attack by the USSR in 1956 depends upon the degree to which all of the following conditions have been fulfilled:

a. The spiritual and moral regeneration of the North Atlantic Civilization (Western Europe, U.K., U.S., etc.) resulting in its complete dedication to an objective to which Soviet-sponsored communism is clearly recognized to be wholly inimical.

b. The rapid physical and economic restoration of Western Europe.

c. The military integration and rearmament of Western Europe.

d. The widespread conviction in Western Europe that active support will be received from the U.S. and that it will be sufficient to ensure eventual victory.

If all these conditions are met to an optimum extent, the Western European bloc would be capable of fighting a spirited delaying action which might afford sufficient time for extensive demolition of industrial and transportation facilities. In fact if all the conditions can be met the probabilities of a conflict are thereby greatly reduced. Failure to achieve the four conditions listed will mean that either the various countries of Western Europe will fall one by one into the orbit of the Soviet Union prior to 1956 or that they will put up a half-hearted, uncoordinated, and ineffective resistance to an attack by the Soviet Union in that year.

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In either of these two unfavorable eventualities the Soviets will secure in a relatively undamaged state the vast industrial plant of Western Europe and the great pool of skilled labor and technically proficient supervisory personnel with which to operate it.

If present trends continue, it is not likely that the four prerequisites to effective military resistance will be met.

Regular armed forces of these countries of Western Europe in 1956 would total approximately 1,100,000 men. Several million trained reserves would probably not be mobilizable due to the rapidity of a Soviet advance.

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ESTIMATE OF PROBABLE DEVELOPMENTS  
IN THE WORLD POLITICAL SITUATION UP TO 1956

THE PROBLEM

1. To estimate probable developments in the world political situation up to 1956.

DISCUSSION

2. See Appendix (page 6).

CONCLUSIONS

3. The western powers do not want war. War within the ten-year term should seem militarily inadvisable to the Soviets. Accordingly, a planned war is unlikely to eventuate prior to 1956, although "accidental" war might result from a Soviet miscalculation, in such an explosive situation as that concerning Trieste, as to how far one or more of the western powers might be pushed without resorting to military action.

4. Among numerous dynamic factors bearing on the short term course of world politics, the current state of political conflict between the Soviet bloc and the western democracies will govern, providing the frame-work in which other forces must operate.

5. Soviet policy is founded on the concept of a basic conflict between "Communism" and "Capitalism", resolvable only by the eventual destruction of one or the other. The western democracies do not accept the thesis, on ideological grounds, that Soviet Communism must be destroyed as a necessary condition to their own survival. They must, however, accept the central fact in the situation as it exists: that while the present Soviet policy and attitude of hostility persists, the Soviet and non-Soviet worlds are and will be, at the minimum,

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in a state of political belligerency. It is a situation in which "power" is now being used and will continue to be used, although open and declared warfare may never eventuate.

6. The principal possible ten-year trends are, first, a continuation of the approximate status quo; second, an improving Soviet and Communist world position; and third, an improving western democratic world position. In view of the dynamic factors affecting the situation, preservation of the status quo appears unlikely. An improving Soviet and Communist position would be assured by negative and vacillating western democratic policies and actions. In such case the western democracies by 1956 might face overwhelming political and military power abroad, weakness at home, and the probability of defeat in any war which might then eventuate between themselves and the Soviets. On the other hand, an improved western democratic position would result from western democratic policy and actions which include:

- a. A continuing demonstration of genuine readiness for war.
- b. A continuing demonstration of the strength and validity of western democratic political and economic methods.
- c. Firm, positive and continuing political, economic and educational measures countering those of Soviet Communism.

7. The principal indeterminate factor in estimating the ten-year course of world politics is the firmness and continuity with which the U. S. and the British Commonwealth will pursue a course adequate to safeguard their essential security. U.S. policy can conceivably change through some major swing in public sentiment regarding Russia and Soviet Communism, although, at the present, this seems less likely than previous history might indicate. Changes in British policy might be occasioned through conditions arising from the vulnerability of the British Isles to atomic and guided missile attack from the Continent.

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Present indications are that the western democracies are aware of the Soviet threat to their national interests, and are awakening to the need of adopting those measures required to safeguard their interests. A continuation of this trend to the point of effectiveness should result in political developments during the ten-year period, on a geographic basis, somewhat as follows:

a. Within the Soviet bloc area, Communist totalitarian control will be intensified, with emphasis on nationalism and Pan-Slavism, Communism remaining a force for accomplishment of Soviet-Communist and Pan-Slavic expansionist objectives. There should be continuing restiveness among a proportion of Poles, Finns, Bulgars, Hungarians, Yugoslavs, Albanians and Rumanians, whose nationalism inherently opposes their absorption by the Soviet Union.

b. Among the western powers, there should be an increasing community of interest and an increasing unity brought about principally by a common opposition to any prospect of Soviet domination.

c. Within western Europe, France, Italy, Spain, Portugal and the smaller western democratic powers will follow the Anglo-American lead, Switzerland and Scandinavia attempting a course of neutrality. Germany will probably remain split, with an inevitable effort on the part of both Soviets and western democracies to make partners to some extent of the German peoples under their respective authorities. Diplomatic crises will recur. European economy will be slow in recovering, although there will probably be limited trade between eastern and western Europe,

d. In the Near and Middle East, Greece is likely to fall more and more under Soviet influence, with Turkey, supported by the western democracies, remaining independent. Soviet



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pressure will continue to be strongly exerted in the Middle Eastern oil areas and should result in bringing Iran increasingly under Soviet influence as Iraq falls increasingly under British influence.

e. In the Far East, China will not emerge as an important power factor, regardless of the short-term course of events. The Soviets will extend their indirect control to include Inner Mongolia and Sinkiang, and will prevent any exploitation of Manchurian resources by the Chinese National Government. The Chinese Government will remain friendly to the U.S., although to little practical effect in view of the internal conflict to which China will continue subject. Korea will probably fall entirely under indirect Soviet domination. Japan will be increasingly oriented, both politically and economically, toward the U.S.

f. Latin America will adhere to the principal of western hemispheric solidarity.

g. Within colonial and backward areas, the ends of rising nationalisms will combine temporarily with population pressures and the superficial appeal of Communism to create numerous dislocations, none of which if handled with enlightened understanding will, in the short-term, produce either complete chaos or war. A precarious stability, with respect to international politics, should maintain in India, resources of which are unlikely, however, to be as fully available to Britain in another war as heretofore. Western democratic economic and military measures should assure short-term stability in Malaya, Indonesia and colonial Africa. The Italian colonies will probably be placed under a form of trusteeship. French North Africa will probably remain in French possession.

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8. A continuing atomic armament race is probable. Towards the end of the ten year period, the growing probability that at least two potentially hostile powers possess atomic bombs may produce a type of world hysteria in which each diplomatic incident may be seen as an international crisis.

9. It might be anticipated that any trend in the development of world politics, evident by 1956, which is generally favorable either to Soviet objectives or those of the western democracies, will continue with accelerated force after 1956. If this trend is favorable to the western democracies, there should come at some time soon thereafter a particularly critical point in international relations. This will be the point at which the Soviets, with particular regard to considerations of atomic warfare, calculate that they must gain their ends by means of Communist revolutions and war, or accept the necessity for sharply curtailing their expansionist objectives. The decision is likely to be influenced by the immediate war position of the western democracies at that time.

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A P P E N D I X

DISCUSSION

1. The decade prior to 1946 was one of extraordinary political activity. In 1936, only two overt moves (Japanese intervention in Manchuria and Italian intervention in Ethiopia) had occurred in the political interplay which produced the greatly altered world situation of 1946. The 1936 political factors which led to this result were perhaps neither so dynamic nor so numerous as those which exist in 1946 to influence future events. There are current indications, nevertheless, that further sharp and extensive political change is likely to occur after, rather than before, 1956.

2. Among fundamental long-term trends to which consideration must be given in gauging the course of world politics are the following:

- a. The continuing effective shrinkage of the world resulting from the accelerated pace of technological progress.
- b. Population changes which affect national potentialities and which create grave dislocations among backward and dependent peoples.
- c. The growth of nationalism and the desire for an improved lot among backward and dependent peoples.

3. Recently evolved and major dynamic factors which must be envisaged as affecting world political developments during the coming decade include, at the minimum:

- a. The conflict in ideology and objectives between the Soviet bloc and the western democratic powers.
- b. The development of atomic energy.
- c. Chaotic political, economic and social conditions in continental Europe, particularly in Germany.
- d. The absence of indigenous power, except for that of the USSR, in Asia.
- e. The United Nations concept.

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4. Among these various factors, any of which might normally effect major political changes, one in particular produces the framework within which the remainder must operate. This is the conflict in ideology and objectives between the Soviet Communist bloc and the western democratic powers, which in the short term appears likely to exercise a compelling influence upon world affairs. The United Nations can be regarded only as an arena in this conflict, a dynamic factor principally in providing a focal point for world opinion.

5. Soviet policy is founded on the concept of a basic conflict between "Communism" and "Capitalism", resolvable only by the eventual destruction of one or the other. Despite their occasional tactic of denying this concept, Soviet leaders as frequently reaffirm it, and Soviet actions remain consistent with underlying belief in its validity. The western democracies do not accept the thesis, on ideological grounds, that Soviet Communism must be destroyed by war as a necessary condition to their own survival. They must, however, accept the central fact in the situation as it exists: that while the present Soviet policy and attitude of hostility persists the Soviet and non-Soviet worlds are and will be, at the minimum, in a state of political belligerency. It is a situation in which force is now being used and will continue to be used, although open and declared warfare may never eventuate.

6. The basic objective of the USSR appears to be a limitless expansion of Soviet Communism accompanied by a considerable territorial expansion of Russian imperialism. She will pursue this objective with persistence and flexibility, recognizing no neutral ground, and hence no neutrals, and using any means which fit her purpose. In the face of this Soviet objective and these Soviet tactics, and in the light of enormous Soviet military and political power, in being, in Europe and in Asia, the western

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democracies will be forced to mobilize their political and military resources to support what is to them an equally fundamental objective which clashes directly with Soviet aims. This objective might be stated as the preservation at all costs of democratic economic and political processes, emphasizing individual and national freedom, which are favorable to the prospect of international change by evolution, rather than by force. Such preservation will depend primarily on the leadership and strength of the U.S. and the British Commonwealth.

7. A period without open war would appear to be desirable to the Soviet planners if the USSR is: (a) to recuperate from World War II; (b) to overcome a probable Soviet disadvantage in atomic weapons; (c) to create, in alien areas under Soviet domination conditions giving reasonable guarantees against dangerous subversion in the event of war; (d) to gain some opportunity of exploiting the war potential of such areas prior to and during a war; (e) to achieve, if possible, a barrier of distance around the political and industrial heart of the Soviet Union proper to assist in holding beyond range those weapons which might be used decisively against her; and (f) to create and perfect adequate Communist fifth columns in countries not adhering to the Soviet cause. It should follow that the most profitable short-term lines of Soviet political action would include: (a) consolidation of control within the Soviet perimeter, expanding that perimeter by continuing opportunist pressure at all soft spots wherever they develop or may be created; and (b) continuation and acceleration of Communist international activities in order to weaken opposition to Soviet policy and to prepare subversive forces for possible employment in war. Theoretically the USSR should not, in the short term, commence any planned war. Considering the internal industrial and scientific tasks confronting the Soviet Union in her program of war preparation,

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and her politico-economic problems in recently subjugated territories, this short term should be at least five, and probably ten, years. During this period, "accidental" war, resulting perhaps from Soviet miscalculation as to how far one or more of the western countries can be pushed without striking back in such an explosive situation as that concerning Trieste, must be considered a continuing possibility. In the longer term, five to ten years or more, unless basic Soviet policy has changed or the western powers have discovered a means of holding the Soviets in check, it must at present be concluded that the likelihood of war may increase in direct proportion to: (a) difficulties encountered by the Soviets in attaining their objectives by means short of war; and (b) their success in overcoming deficiencies in the Soviet war potential.

8. The U.S. and the British Commonwealth, in company to a greater or lesser degree with the remaining western powers, have elected to oppose the expansionist course of Soviet Communism. The position assumed in accordance with this decision is currently one of "thus far and no farther". A geographic advance of direct Soviet influence is resisted within the framework of the status quo and of existing international agreements, as in Iran or Turkey, both diplomatically and by the threat of force. The geographic advance of Soviet satellites is similarly checked, Trieste being an outstanding case in point. Expansion of Communist influence beyond the Soviet periphery is opposed by indirect means and on occasion, as in the case of the recent U.S. loan to France, by direct support to a Communist-threatened government. This course of action, involving avoidance of war short of compromising their fundamental security interests or their fundamental objective, the western democracies clearly pursue in order to gain time for political action which may encourage an evolution, on terms favorable to them, of genuine peace and security.

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9. The course of action which the western democracies are now following possesses the merit of flexibility. It permits of increases or decreases in the degree of counter-pressure they exert against the Soviets, depending upon the Soviet and world reaction. It permits a continuing adaptation of their tools of power, whether the threat of force, moral suasion, or economic pressure, to a political conflict the end for which is not now in sight. If their course of action is to succeed, however:

a. Preparations for military action by the western democracies must be initiated and sustained on a basis calculated to present the Soviets at all times with a genuine prospect of decisive defeat in war precipitated by Soviet aggression.

b. The valid possibility must exist that political action by the western powers can find a peaceful solution to the basic conflict between the USSR and the non-Soviet world. The task will obviously be one of extreme difficulty. If realistic and fully adequate preparation for war by the western democracies can assure purchase of time, only inspired political action on their part, including positive and effective propaganda counters to the appeal of Communism, can exploit this time effectively. The general international situation ten years hence, unless war has intervened, will be favorable or unfavorable to an ultimate peaceful solution largely in terms of the vigor and effectiveness of United States and British policies and actions during the interim. The future attitude of the United States is a principal factor in attempting an estimate of probable world political developments during the next ten years.

10. A second principal factor arises in considering the possible development of British policy during the coming decade. In general, the aims and objectives of the British Commonwealth

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of Nations would be obtained like those of the United States by complete success for the stated aims of the United Nations Charter. Under less stress than is likely to develop from Soviet pressure, there can be little doubt that Anglo-American cooperation would exert itself to attempt the peaceful concerted solution of world problems on a basis favorable to the fundamental western democratic objective. Even under conditions of severe Soviet pressure, it appears likely that the British Commonwealth should remain steadfast in attempting to oppose Soviet-Communist expansionism. However, the United Kingdom itself is faced by three fundamental considerations of major importance:

a. The necessity for a period of peace and economic opportunity to permit recuperation from the effects of the supreme effort she made in World War II, which places the United Kingdom in poor position to contemplate the prospect of another war in the near future.

b. United Kingdom vulnerability to a type of attack, from cross-Channel positions, by weapons similar to those developed by the Germans at the end of World War II and the possibility of severance of "lifeline" communications.

c. The implications of adopting a position which might develop into irrevocable alignment with the United States, whose ideals though fixed may be susceptible to variations in emphasis which could affect U.S. foreign policy, thereby conceivably placing British security in some jeopardy.

These considerations might lead the British to consider attempting a variation of their traditional "balance-of-power" role in Europe, this time as mediators on a global scale between the United States and the USSR. Strong United States and Dominion support, together with the reasonable prospect of being able to prevent or survive Soviet missile and rocket attack,



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would permit Britain to remain resolute in opposition to Soviet pressure.

11. A third principal factor in the development of the world political situation is implicit in the uncertainty surrounding efforts to obtain adequate international control of atomic energy. The minimum criteria for such control must include the right of international inspection for atomic activities: it appears unlikely that the USSR will accept this condition. Genuine acceptance and implementation by the Soviet Union of effective arrangements for the control of atomic energy would be a strong indication that her basic policy had been misjudged or altered. Such an eventuality is so unlikely under current circumstances that an atomic armaments race must be anticipated during the next ten years and beyond. Another approach to the atomic problem, not to be entirely discounted, might be taken by Russia. Presuming that the Soviets intend sooner or later to fight or risk war, if necessary to achieve their over-all objectives, it is possible they might evaluate that they would put the western democracies in a position of severe disadvantage if they could "outlaw" the atomic bomb, effect the destruction of all stocks of the bomb, and make it impossible for anyone to perform its rapid manufacture. Under such an evaluation, the Soviets might go far towards meeting our conditions of the scheme of atomic control. The increasing probability that at least two opposed nations possess atomic weapons will, toward the end of the period, result in a tense and excitable world public opinion and an exaggeration of political incidents into political crises - possibly in a species of world hysteria.

12. A major prize in the continuing conflict short of war, throughout the coming decade, will be the adherence of wavering peoples to the Soviet or to the western democratic cause. The Soviets can be expected to exploit their favorable opportunity of championing the causes of colonial peoples, among whom

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nationalism and Communism may temporarily join forces. The general good will felt for the U.S., if not for the colonial powers, among backward and dependent peoples, should make it unlikely, however, that any large segments will be completely won over to Soviet views in the short term, unless: (a) the United States, the British Commonwealth and potential allies display great political ineptitude; or (b) the United States and British economic systems suffer a severe recession, which could be expected to have serious economic and political world repercussions, with a consequent turn to Soviet economic (and political) methods by peoples who have seen all other methods discredited. This effect of a severe economic recession would not be restricted to backward and colonial areas, but would equally - and with more far-reaching results - extend to continental European nations struggling to regain economic stability, many of whom might then be impelled to adopt Communist economic (and political) methods. A breakdown in the Soviet economy, should it occur, would be less harmful to Soviet international aims, since it would be capable of effective concealment and since the Soviet system interlocks little with other major economic systems. There are few indications that the Communist hold on Russia might be broken in the short term: it must be anticipated, on the contrary, that the Soviet Union will continue to present a front of solid unity to the outside world. On the other hand, effective western democratic action may increasingly induce a decline in international Communist strength and effectiveness, and may turn Soviet Communism more and more into the fold of Russian nationalism.

13. The apparent possibilities for the general short term trend of world politics include, first, an approximate maintenance of the status quo; second, an improving western democratic position, and third, an improving Soviet bloc and Communist position. The possibility exists, of course, that unpredictable events might occur at any time to alter or reverse an apparent trend: this might occur, for example, in the case that the Soviets demonstrated that they had obtained quantity production of atomic weapons.

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14. The probability that the status quo will maintain throughout the period cannot be considered great. While the western democracies possess little urge to rapid change, authoritarian Soviet and Communist elements must in all likelihood continue an aggressive political momentum or face a deteriorating position.

15. A trend toward improvement of the Soviet political and power position would perhaps result less from positive Soviet and Communist action, especially in view of the political ineptitude frequently displayed by these elements, than from inadequacies in western democratic policy and action. Should the western democracies, particularly the U.S. and Britain, fail in firm, cooperative and imaginative opposition to Soviet expansionism, should their lack of war preparedness invite Soviet aggression, or should their economic systems (especially that of the U.S.) suffer serious failure, it might be anticipated that the Soviet bloc would encounter increasing success in world politics. By 1956, the western democracies could in such case find themselves confronted with overwhelming Soviet political and military power, weakened domestic positions, and the prospect of probable defeat in any war which might then eventuate. A deterioration of this type in the western democratic position would be evidenced by an increasing rapprochement of the German peoples, France, Italy and the smaller western European powers with the Soviet Union; by an extension of direct or indirect Soviet control in the Near and Middle East; by complete political chaos or Communist gains in India, Malaya and Indonesia; by a consolidation of Soviet control over peripheral Chinese provinces and Communist infiltration into the Chinese Government; and by diminished U.S. prestige in Latin America. Even in such case, it appears unlikely that a Soviet planned war would occur until after 1956, especially as Soviet objectives under such conditions could more readily be obtained by means short of war.

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16. It appears likely, although by no means certain, that the western democracies will continue, as is apparently the case at present, to recognize the necessity of protecting their essential national interests. The U.S. and Britain have in World War II evidenced the cost in lives, material, wealth and economic stability of tardy and inadequately forceful action to forestall aggression. The U.S. has twice within the last generation considered its fundamental interests menaced, to an extent requiring U.S. participation in overseas warfare, by a threatening European situation before that situation has directly and strongly menaced the western hemisphere. The current state of world political conflict possesses apparent elements of menace to the U.S. at least as great as any others during the past generation. In the event that the U.S. elects to take those steps required to safeguard its national security, it may be anticipated that Britain and the remaining western powers will be sufficiently reassured to remain joined with the U.S. in a firm policy counter to that of the Soviets. In this event, the most probable short-term trend in world politics should be one of an improving western democratic political and power position. Improvement in the western democratic position will in such circumstances be less marked than would an improvement of the Soviet bloc position in the less likely event that the political trend should take a reverse direction: in certain areas of conflict the Soviet bloc position possesses current strength sufficient to make further success likely despite any measures short of war which can be taken by the western powers. However, in the longer term, as western democratic successes achieved an inevitable propaganda impact upon restive aliens under Soviet control, it might be anticipated that a short-term trend favorable to the western democracies would meet with continuing and increasing success.

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17. The ten-year trend in world politics, in the event that the western powers take positive steps to safeguard their national interests, might be gauged on a geographic basis somewhat as follows:

a. Within the Soviet bloc area, Communist totalitarian control will probably be extended and intensified. Additional emphasis will be placed on nationalism and Pan-Slavism. There can be anticipated little change in Soviet political objectives, which represent, for the most part, the objectives of Russian imperialism and Pan-Slavism as well as Soviet Communism. Soviet Communism will continue to be utilized as a tool in the expansion of direct and indirect Soviet influence. It might be anticipated that some of such diverse peoples as Poles, Finns, Hungarians, Bulgars, Yugoslavs, Albanians and Rumanians, will remain restive under Soviet domination.

b. Among the western powers the community of political and economic interest should be extended by further effective world shrinkage resulting from technological progress, as well as by the common interest in building for an enduring peace in terms of their common political evolution.

c. Within western Europe, France, Italy and the smaller democratic powers will follow the lead of the U.S. and Britain, except that Switzerland, because of its traditions and Scandinavia because of its vulnerability to Soviet force will attempt to pursue a course of neutrality. Spain and Portugal, whose governments fear nothing so much as Communism and which are unlikely to forget the power demonstrated by the Allies during World War II, will adhere to the western democratic side in countering Soviet and Communist expansion. It appears likely that Spain may gradually be brought to adopt more democratic principles of government,

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although the process will probably not have been completed by 1956. Germany (and, with less likelihood, Austria) will probably remain divided substantially as at present, the Soviets continuing to hold and occupy eastern Germany. While German nationalism will impel German unity, the divisive force resulting from sharply differing political ideologies in the two main divisions of Germany will operate equally to force reluctant German acceptance of an unsatisfactory situation. It can scarcely be doubted that both the Soviets and the western democracies will be forced to make partners, to the extent possible in terms of existing international agreements, public opinion, and the inherent danger in such a course, of the German peoples under their surveillance. At the same time, the interdependence of the European economy is likely to force a series of trade agreements between eastern and western Europe, scope of which will be determined for the most part by the minimum requirements of eastern Europe. European economic recovery, upon which ultimately the peace of the world may turn, is likely to be slow. Diplomatic crises will be frequent and recurring, especially at such points of dangerous friction as Trieste.

d. In the Near and Middle East political conflict and tension is likely to increase throughout the period. Although Greece may maintain its nominal independence of action, it appears likely that the Soviet bloc position vis-a-vis Greece may be improved by a withdrawal of British influence under conditions in which that influence could be maintained only at risk of war; Greece is likely to remain in a disputed shadow-land, but increasingly more vulnerable to Soviet pressure than to that of the western democracies. Turkey, backed by the western democracies, will resist Soviet pressure and will retain its independence of action, although the

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Montreux Convention will probably be revised on terms more favorable to the Soviet Union. (It may be anticipated that the Mediterranean will remain under western democratic control, though not without challenge from Soviet bloc bases on Balkan coastlines.) Despite its rough handling by the U.S. and, to a lesser extent, Britain on the Palestine immigration question, the Arab League is fundamentally distrustful of Russia and Communism, and a minority of wealthy and powerful leaders possess close ties with Anglo-American oil interests. It may be anticipated that the general political situation in the Middle East will undergo no sharp change, although increased Soviet control of Iran and increased British control of Iraq appears likely. The pressure of Soviet expansionism in the Middle East, both as a threat to British Empire communications and because of estimated serious oil deficiencies best remediable through access to Middle Eastern oil reserves, will continue and may mount.

e. In the Far East it cannot be anticipated that China will have emerged as an important power factor, regardless of the political trend during the coming decade. It appears likely that peripheral Chinese provinces, including Inner Mongolia and Sinkiang, will have come under Soviet control to the same extent now obtaining in Outer Mongolia. Manchuria, key to the Chinese power position, may remain under Chinese Government control, but will probably be rendered unexploitable by Soviet pressure and the Soviet threat of force in the area. The Chinese Government, hampered by continuing internal conflict, will remain friendly to the western democracies, particularly the U.S., to such effect as may be determined by an unpredictable future course of U.S. action. Korea is likely to come entirely under indirect Soviet domination: a probable withdrawal of occupation forces before 1956 will leave Korea's politically immature

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people open to control through highly-organized Communist minorities. Japan, however, will in all likelihood be increasingly oriented toward the U.S. both economically and politically. In the face of a predominantly American occupation, Communist propaganda and infiltration methods will probably meet with little success. It must be anticipated that the Soviets, confronted with an extension of American power throughout the Pacific and in Japan, will be seriously perturbed over their security position in Asiatic Russia, and will make repeated attempts both to speed the departure of U.S. troops from Japan and to substitute Soviet for U.S. influence in Japan: such efforts should not have succeeded by 1956.

f. The Latin-American states will continue to offer difficult diplomatic problems for solution principally by the U.S. In the final analysis, and despite strong Leftist and divisive tendencies in many areas, Latin America will adhere to the principal of western hemispheric solidarity. Its predominance of such institutions as large landholding, private capital and the Catholic Church, though susceptible to long-term deterioration, will in the short-term impel, singly or in combination, a profound distrust of the Soviets and Communism regardless of the degree of friendliness felt by the various states for the U.S. It is profoundly in the national interests of Latin American states to avoid any irrevocable break with those hemispheric and Atlantic neighbors whose power can readily be brought to bear in South America. These neighbors are the U.S. and Britain. significant Soviet power can scarcely, in the short-term, be projected to the Western Hemisphere.

g. Within colonial and backwards areas, the ends of a rising nationalism will combine temporarily with population pressures and the superficial appeal of Communism to create political, social and economic dislocations, none of which



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in the short-term should produce either complete chaos or cause for war. India will not soon compose its ancient religious and racial differences, but should with British tutelage achieve a state of reasonable stability, in the international political sense, during the short term and should remain no more subject to Communist propaganda influence than at present. It appears likely that India by the end of the decade will have rendered itself even less available for British exploitation in event of war than was the case during World War II. In this sense, the Indian political situation will have improved from a Soviet point of view, and deteriorated in the eyes of the western democracies. Indonesia and Malaya, where, as in India, population pressures combine with nationalistic ideas to favor the prospect of sharp long-term political changes, the ten-year prospect points to an increasing, if temporary, stability. While the Soviets will champion the cause of dependent peoples within the United Nations, they will be incapable of extending them active military or economic assistance. The western democracies, already meeting the Soviet and Communist ideological threat by increasing concessions to dependent peoples, will be in a position to take effective political, military and economic action in satisfying economic wants on the one hand while suppressing disturbance on the other. Africa will supply cause for international friction principally in the Italian colonies and Egypt, but will probably offer no, or few, international problems of a nature threatening war. The Italian colonies will probably come under a form of United Nations trusteeship. Incipient African nationalisms further south offer only minor short-term cause for international political friction. The French North African colonies, despite a nationalistic trend toward separation from France, are unlikely in the short term to achieve a goal of this

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type in view of the powerful resistance which would be encountered in a France whose national esteem has too recently and too strongly been wounded by the events of World War II.

18. The United Nations will remain for the most part a forum both for Soviet propaganda and for the similar expression of western democratic views. It appears most unlikely that use will be made of United Nations Security Forces. The possibility exists that the Soviet Union and its satellites, if consistently defeated by parliamentary methods, might withdraw from active participation in the United Nations, although probably without making a formal break damaging to Soviet prestige in world opinion.

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COPY NO. 16

STRATEGIC IMPORTANCE OF THE ARCTIC  
AND SUB-ARCTIC REGIONS

THE PROBLEM

1. To evaluate in the light of the current trend and predictable progress in the development of new weapons the strategic importance of the Arctic and sub-Arctic regions, both in their relationship to the security of the Western Hemisphere and their feasibility as to a base area for support of offensive operations across the Pole projected for a ten-year period.

ASSUMPTION

2. It is assumed that Great Britain and other nations of the British Commonwealth will remain friendly with the United States and therefore, the U.S.S.R. is the only world power with the capability of posing a threat to the security of the Western Hemisphere.

DISCUSSION

3. The time available for preparation of this study was inadequate to permit review and evaluation of all available information on the Arctic and sub-Arctic regions. The study is not supported by a complete Joint Intelligence estimate and was prepared without benefit of an analysis of the information obtained by recent operations (such as NANOOK) into the area.

STRATEGIC ANALYSIS

4. See Appendix (page 4).

CONCLUSIONS

5. It is concluded that:

a. The Arctic is a region of strategic importance but capabilities of the United States and the U.S.S.R. for conducting major military operations in, through, or from the area are limited at the present time.

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b. The sub-Arctic, between Iceland on the east and the Kuriles on the west, both inclusive, contains areas of primary and immediate strategic importance for the defense of the United States, for the support and defense of our potential Allies, particularly the United Kingdom and Canada, for the support of our occupation forces, and for the projection of offensive operations.

c. During the next ten years the capability of the United States and of the U.S.S.R. for conducting offensive air operations from or through the Arctic area will increase with the further development of new weapons, but topographic, climatic, and logistic considerations will still affect these capabilities. However, it is unlikely that either country will develop an appreciable capability for ground or naval operations in this area.

d. For the next ten years the northeast avenue of operations represents the most probable route for an attack against the United States proper. This avenue, as well as its North Pacific counter-part, will assume progressively greater strategic importance with the passage of time, with the resultant increase in enemy capabilities for airborne, seaborne, and long-range missiles operations, and with the increase in our own capabilities for offensive and defensive counter-actions.

e. U.S. military rights and facilities in both Iceland and Greenland are essential to adequate U.S. security. From both the offensive and defensive standpoints, Iceland is of primary strategic importance due to its location and accessibility. Particularly from the defensive standpoint Greenland would be valuable as an alternate to Iceland because of its location and size.

f. During the next ten years our primary strategic objective in the Arctic and sub-Arctic regions should be that of security of the Western Hemisphere and support of potential Allies. Our strategy in the area should also include any means practicable for conducting early offensive action therefrom.

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g. Measures for the accomplishment and furtherance of our strategic objective in the area during the next ten years should include the following:

(1) Development of means, in so far as practicable, for projection of offensive operations against the enemy, oriented around those bases most capable of being logistically supported.

(2) Reconnaissance and surveillance of the area, particularly in obscure and uninhabited regions, to insure immediate detection of any enemy activity.

(3) Early warning and meteorological chain from Alaska, through northern Canada, and extending to Greenland.

(4) Adequate bases in the area for support of naval, ground and air operations to protect our vital areas and lines of communication and to control the avenues of operation.

(5) Training exercises in the area by naval, ground and air forces to familiarize personnel with Arctic operating conditions.

(6) Exploration and mapping of areas on which information is lacking.

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A P P E N D I X

STRATEGIC ANALYSIS

I. FACTORS AFFECTING OPERATIONS IN THE AREA

See Annex "A" to Appendix (LOG- 19).

II. STRATEGIC IMPORTANCE OF THE AREA

General.

1. In the past the Arctic and sub-Arctic regions have been looked upon as a large sparsely populated area composed principally of floating pack ice and frozen barren lands which presented practically insurmountable obstacles to military operations. Heretofore, the area has been accorded relatively minor strategic importance except as a barrier which has made the continental United States comparatively immune from attack by a hostile power outside the Western Hemisphere. We are now confronted with the realization that technical developments in the art of warfare, occasioned by scientific progress, have altered this situation and the present trend in the development of new weapons portends that there will be a progressive lessening of this immunity. The principal advancements in the science of war responsible for this change are:

a. Increased range and speed of application of destructive power and armed forces, resulting from the development of long-range aircraft, amphibious technique, guided missiles, and advancement in technique of submarine warfare.

b. Increased destructive capacity of weapons resulting from the development of the atomic bomb, rockets, and biological warfare agents.

2. In any future war, under our over-all strategic concept we would initiate as soon as practicable a series of operations, exploiting new weapons and the mobility of airborne and seaborne striking forces, to disrupt or destroy the more dangerous enemy means of action or counteraction, to blockade, to bombard and to initiate the destruction of his war-making capacity.

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3. The foregoing considerations underline the present, and even to a greater degree the future strategic importance of the Arctic and sub-Arctic regions. Portions of the area constitute an integral part of our expanded strategic frontier within which we must dispose forces and installations in an outlying base system to reconnoiter and survey possible enemy actions, intercept attacking forces and weapons, protect our lines of communication, deny the enemy use of base sites, and to launch counter-offensive actions against the enemy.

Avenues of Operations.

4. The chief strategic importance of the Arctic area derives from the fact that it comprises the most direct route between North America and the U.S.S.R. There are no all-land routes between the northern part of the Western Hemisphere and Eurasia, the two being separated by ocean areas and a wide expanse of floating pack ice. Major land operations across the ice masses would present almost insurmountable obstacles due principally to the logistical difficulties that would be encountered. However, contained in the area are a number of islands which could serve as bases for offensive operations or as stepping stones for the projection of operations (see Annex "D", page 40).

5. Sea communications in the Arctic Ocean are extremely limited due to the ice conditions, navigation being confined to the northeast and northwest passages. In recent years the Soviets have been using their northeast passage to a greater but still limited extent, not only as a channel of commerce, but for the transfer of fleet units between the Baltic and the Pacific. However, the portions of the North Atlantic and North Pacific Oceans within the limits of the area under discussion contain some of the important commercial sea lanes of the world. Alaska and the Aleutians are located adjacent to the great circle route between the United States and the Asiatic Mainland.

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Iceland is within relatively short operating range of the great circle route between the United States and Great Britain and may be considered to be the key strategic location in the North Atlantic.

6. There are no insurmountable obstacles to flying over the region, weather and navigation being the principal difficulties. Difficult weather conditions consist mainly of extreme cold, but otherwise, the weather is no more hazardous and variable than in most of the temperate regions. Navigation at present is difficult due to lack of radio aids and communication facilities as well as disturbing magnetic conditions. All of these difficulties will decrease with experience in the area and the installation of modern navigational aids. It is obvious that the development of air power has accentuated the possibilities of the Arctic as an important transportation route.

7. Due to the configuration of land masses, location of islands, water areas, and ice masses, the area logically lends itself to a division into three broad strategic areas or avenues of operations as follows:

a. The northeast avenue comprising the Murmansk-Archangel area, Scandinavia, Spitzbergen, Iceland, Greenland, Labrador, and Newfoundland.

b. The north or polar cap avenue which consists of the north central Siberian area, the Arctic Ocean and the north Canadian region.

c. The northwest avenue comprised of Kamchatka, northeastern Siberia, Alaska, the Aleutians and northwest Canada.

Strategic Considerations.

8. The vital areas of the United States are located in general in the northeast and Great Lake regions, with isolated areas of importance on the West Coast and in the Gulf Coast area. Furthermore, with respect to existing facilities and lines of communication, Scandinavia presents the most advantageous areas for the



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launching of enemy attacks within or through the area under consideration. Likewise, this route presents the minimum logistical support difficulties for the projection of operations from the United States to the major industrial areas of the U.S.S.R. It appears logical therefore to designate the northeast avenue as the probable route of primary operations in the Arctic and sub-Arctic areas for the next ten years.

9. This avenue of operations contains a number of islands surrounded in part by waters of the North Atlantic and Arctic Oceans and in part by polar floating pack ice, the most important of which are Spitzbergen, Iceland and Greenland. A potential enemy could conceivably launch a series of land, sea and air operations against these positions. Once attained, they would temporarily project a base of operations closer to the vital areas of the United States, and place that enemy in a position to interdict our sea and air communications to the United Kingdom and northern Europe. Successful employment of these base areas for sustained offensive operations would require control of the sea and air approaches to the area. It is unlikely that the U.S.S.R. will possess a naval and air force capable of gaining and retaining such control during the next ten years.

10. The U.S.S.R. apparently recognizes the strategic importance of Spitzbergen and has evidenced increased interest in it recently; it is probably considered to be a necessary link in their outer security belt. Jan Mayen, about 600 miles distant would only be important as a potential early warning and weather observation station. Iceland, located about 2100 miles from Moscow and about 2,500 miles from the northeastern portion of the United States, has a few well developed airfields and could serve as a base for limited strategic air operations against the U.S.S.R. With the development of guided missiles of increased range it

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might also serve as a launching site for this weapon. The island has several harbors, which offer potential bases for enemy submarine operations against our shipping over the North Atlantic great circle route.

11. Greenland, which is 5-600 miles from Labrador and Newfoundland, is one of the vital links in our chain of defenses in the Arctic area. The ice-free narrow coastal tundra areas offer sites for air installations and launching platforms for guided missiles, but logistic support for operations would be difficult since most of the few good harbors are ice-bound except during the summer months.

12. Newfoundland is one of the important base areas for the maintenance of our air and sea communications to northern Europe. From bases in the area, Canadian-U.S. forces can assist materially in exercising control of the air and sea avenues to the North American continent.

13. It would be absolutely essential that we deny use to an enemy of base sites in Iceland, Greenland, and Newfoundland for conducting offensive operations against Canada and the United States. In addition, it would be essential for us to control these areas in order to protect our lines of communication and for the projection of immediate counteroffensive action against the enemy.

14. The north, or polar ice cap route is considered to be of less strategic importance than the other two avenues of operations. Operations in the area, except by air, are practically impossible due to the wide expanse of floating pack ice covering the area and severe climatic conditions. Operations from bases on the ice pack would be extremely hazardous due to the uncertainties of the ice. Even in the tundra areas large-scale ground movements would be limited due to the terrain conditions and the lack of

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adequate lines of communication. Vehicles with suitable characteristics can move over the snow and ice in winter with comparative ease, but, in summer, movement over the swampy terrain is practically impossible. Practically no part of the area is navigable by vessels in winter except along some of the coastal areas by special ice ships, and in the summer months the northern limit that can be reached by vessels in free navigation is extremely limited.

15. The shortest and most direct approach from the United States to certain industrial areas in the U.S.S.R. is over the polar air route. With the increases in range of aircraft and the increased destructive capacity of weapons launched from aircraft which will probably occur in the next ten years, it is possible that this route would be utilized for strategic air operations. It is also conceivable that guided missiles will be developed in the future but not within the next ten years with performance and range adequate to span the Arctic Ocean. Vital areas of the United States might be subjected to attacks by our most probable enemy from potential base areas in northern Siberia. However, utilization of this area would be difficult due to lack of communications and existing facilities.

16. A potential enemy might attempt to establish bases in the Arctic region of Canada, possibly by airborne operations, but the ultimate success of these operations in the face of timely counteraction by the United States would be unlikely due to the tremendous problem of providing logistic support. The area is considered to offer possibilities as a base area for limited U.S. offensive air operations. Chief difficulty would arise from the extreme lack of lines of communication and the consequent supply problem for a large-scale effort.

17. The above considerations indicate that in the north Canadian region emphasis should be placed on: (1) surveillance

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of the area to insure immediate detection of any enemy activity, (2) an early air warning net as an integral part of the over-all air defense system in the area, and (3) surveys and preparatory measures which will permit the ultimate exploitation of offensive capabilities and the requirements of U.S.-Canadian defense.

18. The strategic importance of the northwest route lies in the close proximity of Alaska and the Aleutians to the Eurasian land mass, and the fact that they are located adjacent to the great circle air and sea routes between the United States and those areas of East Asia which may become capable of supporting military operations. Return sorties on the United States proper from existing bases in Siberia are not now a capability of our most probable enemy, but with the development of aircraft with increased range, the probability of such attacks may have to be reckoned with in the next ten years. Guided missile attacks against the United States and Canada may be possible within the next ten years.

19. The Aleutians and Alaska contain a number of base sites which can be used for the projection of offensive operations against a potential enemy on the Eurasian continent, and for the conduct of operations to protect our line of communications in the area. The geographical location of this area on the northwest avenue of operations makes it a region of primary strategic importance. Eastern Siberia contains relatively few known profitable targets.

20. The projection of offensive operations by the Soviets against Alaska, the Aleutians and beyond from positions in northeastern Siberia would be difficult due to lack of transportation facilities, limited industrial capacity, and scarcity of operating bases in the area. However, by determined effort these deficiencies in some measure could be overcome in the next ten years. The Kamchatka Peninsula at present is the most suitable base in the area for the projection of offensive operations. Petropovlovsk

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has been developed as a naval and air base and in the event of hostilities the Soviets would undoubtedly expand existing facilities for air and naval operations.

21. It is remotely possible that an enemy might attempt the seizure of isolated areas of Alaska or western Canada with sea-borne or airborne forces for use as launching sites for guided missile attack on industrial and population centers of Canada and the U.S. The retention of such an area, assuming superior enemy forces at the point of contact, would be facilitated by the limited land communications to these areas. As a more probable objective, such an attempt might be made as a diversion directed at requiring disproportionately large forces in this area, thus dislocating our efforts elsewhere.

22. Our primary objectives in the northwest approach area would be denial of base sites to the enemy for launching destructive attacks against Canada and the United States, protection of our lines of communication through the area, and provision of security for vital ore-producing sites.

Capabilities for Conducting Operations in the Area.

23. The naval power of the Soviets will increase during the next ten years, but the United States will maintain naval supremacy. It is probable that the Soviets will have superiority in the number but not necessarily in quality of submarines. Soviet capabilities for carrying out and supporting distant large-scale land, sea and air operations will be negligible during this period. They could undertake an amphibious assault against such areas as Iceland and Greenland where opposition from local

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military forces would be nil, unless local forces were supported by Allied or United States forces. Even though the operations were successful initially they would be unable to support sustained operations due to the superior naval and air power we could bring to bear against them.

24. United States naval task forces will be capable of conducting, during the period under consideration, carrier aircraft raids against strategic targets on the Kamchatka Peninsula and in the Bering Sea coastal area of northeast Siberia, except during the periods when the northern sector is iced in. With operating bases available in Iceland, raids could also be conducted against vital areas of Norway and those in the Murmansk area, but proportionately greater losses could probably be expected due to anticipated stronger Soviet air opposition. By 1956, it is probable that these offensive capabilities will include attack with atomic weapons by carrier-based aircraft of at least 300 mile radius and possibly guided missile attack by surface vessels.

25. The Soviets now possess a large submarine force and it is likely that there will be substantial increases in numbers and effectiveness in the next ten years. They will be capable of employing them in operations against United States shipping and naval vessels, in limited attacks on shore installations, possibly with aircraft and V-1 type guided missiles, and in small-scale landings of raiders and saboteurs in obscure areas.

26. The performance of United States submarines and our capabilities for employing them will also increase substantially during the next ten years. It is possible that we will have by that time submarines capable of launching aircraft and guided missile attacks. A further possible use is their employment in the Arctic area as early warning pickets and weather stations.

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27. In three years the Soviets will have sufficient aircraft to provide troop lift for airborne operations against either the Aleutians, Alaska, or possibly northern Greenland. Such operations against any of these places in the face of strong United States counteraction would present, however, supply, reinforcement, and support difficulties which would render ultimate success unlikely. It is probable that in ten years Iceland and other areas in the Arctic and sub-Arctic will be within range for airborne operations. The delivery of sabotage teams at strategic points by this method is a definite capability.

28. None of the industrial areas of the U.S.S.R. are within operational radius of United States long-range bombers at this time from existing and potential bases in the Arctic and sub-Arctic areas, including Iceland and Greenland. By 1949, the United States will have a limited number of bombers with operational radius sufficient to reach all of the major vital industrial areas of the U.S.S.R. if we are able to use bases in Iceland. There are two known bases and possibly a third site suitable for VHB operations. As to Greenland limited surveys have not yet indicated that there are airfield sites suitable for VHB operations. In this connection, northern Greenland will require further survey and study. By 1951, further increase in the radius of action of very heavy bombers (5,000 miles) will permit us to conduct strategic bombing against all of the industrial areas of the U.S.S.R. from bases in Alaska and Newfoundland. We will be capable of carrying out attacks against several of these areas from bases in the northeast United States. Unless fighter escort to the target areas can be provided, the necessity of flying over long distances of enemy territory may result in high losses. The probable development by the U.S.S.R. of anti-aircraft missiles and improvement in conventional means of air defense by 1956, or earlier, will also result in greater

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attrition rates unless we are able to develop more effective bomber defense means.

29. Within the next three years the U.S.S.R. will probably be capable of carrying out from bases in Soviet or Soviet controlled territory, fairly heavy air attacks against the Aleutians, much of Alaska, Iceland and part of Greenland. Control of Scandinavia would permit more effective attacks against Iceland and Greenland. It is probable that all parts of the continental United States will be within range of non-return sorties, but such attacks would hardly be justified unless atomic explosives were employed. It is unlikely that they will be capable of producing and employing such explosives until at least 1950, and possibly not until 1956. Inasmuch as they are now capable of employing biological warfare agents, it is possible this weapon might be used in non-return sorties. In the next five to ten years the Soviets will more than likely be actively engaged in building up a strategic air force and by 1956 all of the continental United States will probably be within range of air attack. The likelihood of success of this form of attack, however, will probably be greatly decreased due to the likely development of ground-to-air missiles, high speed jet fighters and improved air warning devices.

30. Within the next five years a few base areas of Alaska and the Aleutians will be within range of guided missile attack by the Soviets from launching areas in northeast Siberia, but Soviet capabilities for such operations from this area will be very limited due to lack of industrial capacity in the vicinity and lines of communication. It is possible that by 1956 vital areas of western Canada and the northwest United States will be within range. Not until the inherent difficulties in employment of long-range guided missiles in areas distant from production sources



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are overcome, will possession of launching sites in Greenland and Iceland enable them to attack areas of eastern Canada and the eastern United States. Even then the capability would be temporary due to the superior armed forces we could project into these areas. The weight and effectiveness of these attacks would be very limited due to poor accuracy, small payload, and the logistical difficulties that would be encountered. Guided missile attacks from the Arctic region of Canada would be unlikely during the ten years due to the tremendous difficulties that would be involved in establishing and supporting bases in that area, as well as technical limitations of the weapons.

31. By 1949, areas of northeast Siberia and Kamchatka, which contain comparatively few important targets, will be within guided missile range from base areas in Alaska and the Aleutians. It is probable that by 1951 practically all of the industrial areas of the U.S.S.R. would be within range of guided missile attack, if we were able to use Iceland as a launching site and providing we have overcome the technical limitations of storage and assembly. Except perhaps for psychological value, the effectiveness of these attacks would be very limited due to poor accuracy, the probable high percentage of failures, and the relatively small explosive payload. It is doubtful if these operations would be considered worthwhile in view of the large effort that would be required, and the attendant logistic support requirements, to achieve any reasonable destructive effect. It is possible that by 1956 some of these deficiencies will have been alleviated, but the degree of improvement cannot be predicted at this time.

Summary and Conclusions

32. The Arctic is a region of strategic importance but capabilities of the United States and the U.S.S.R. for conducting major military operations in, through, or from the area are limited at the present time.

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33. The sub-Arctic, between Iceland on the east and the Kuriles on the west, both inclusive, contains areas of primary and immediate strategic importance for the defense of the United States, for the support and defense of our potential Allies, particularly the United Kingdom and Canada, for the support of our occupation forces, and for the projection of offensive operations.

34. During the next ten years the capability of the United States and of the U.S.S.R. for conducting offensive air operations from or through the Arctic area will increase with the further development of new weapons, but topographic, climatic, and logistic considerations will still affect these capabilities. However, it is unlikely that either country will develop an appreciable capability for ground or naval operations in this area.

35. For the next ten years the northeast avenue of operations represents the most probable route for an attack against the United States proper. This avenue, as well as its north Pacific counter-part, will assume progressively greater strategic importance with the passage of time, with the resultant increase in enemy capabilities for airborne, seaborne, and long range missiles operations, and with the increase in our own capabilities for offensive and defensive counteractions.

36. Geographic and weather factors greatly influence military operations in the area, particularly in the Arctic region. Extreme climatic conditions, adverse terrain conditions, and lack of adequate lines of communication and facilities make operations from bases in this region difficult and consequently greatly reduce their effectiveness. Operations in the sub-Arctic region are more feasible due to its more extensive development and less severe climatic, terrain and ice conditions. Air operations over the area present no serious difficulties that

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cannot be overcome. The efficiency of military operations in the area will improve with experience and acclimatization of personnel, but the inherent operational difficulties peculiar to the Arctic region will probably continue to limit the scope of operations in that region.

37. U.S. military rights and facilities in both Iceland and Greenland are essential to adequate U.S. security. From both the offensive and defensive standpoints, Iceland is of primary strategic importance due to its location and accessibility. Particularly from the defensive standpoint Greenland would be valuable as an alternate to Iceland because of its location and size.

38. Within the next ten years the strategic importance of Greenland will increase progressively. When certain technical difficulties of operation from Arctic bases can be overcome and the problem of logistic support be solved, the northern part of Greenland could provide a base area for the projection of strategic air operations. However, a more positive determination of the extent to which this area could be utilized will be obtained when the data collected by recent expeditions has been analyzed.

39. From the foregoing, it is concluded that during the next ten years our primary strategic objective in the Arctic and sub-Arctic regions should be that of security of the Western Hemisphere and support of potential allies. Our strategy in the area should also include any means practicable for conducting early offensive action therefrom.

40. Measures for the accomplishment and furtherance of our strategic objective in the area during the next ten years should include the following:

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- a. Development of means, in so far as practicable, for projection of offensive operations against the enemy, oriented around those bases most capable of being logistically supported.
- b. Reconnaissance and surveillance of the area, particularly in obscure and uninhabited regions, to insure immediate detection of any enemy activity.
- c. Early warning chain from Alaska, through northern Canada, and extending to Greenland.
- d. Adequate bases in the area for support of naval, ground and air operations to protect our lines of communication and to control the avenues of operation.
- e. Training exercises in the area by naval, ground and air forces to familiarize personnel with Arctic operating conditions.
- f. Exploration and mapping of areas on which information is lacking.

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ANNEX "A" TO APPENDIX

FACTORS AFFECTING OPERATIONS IN THE AREA

I. TOPOGRAPHY OF ARCTIC AND SUB-ARCTIC REGIONS

1. Arctic Ocean. The North Pole is surrounded by an ocean basin which is about 4% of the earth's total area. Two-thirds of the Arctic Ocean is covered over with ice throughout the year. The ice is normally at its minimum during August. It starts to form in September around the outer edges of the ocean on the shallow waters, building up along the shore to a maximum of about 3 feet in thickness. The following April or May it tends to break away, due to tides and warm currents of water and floats out into the pack ice. The pack ice is from 3 feet to about 8 feet thick where it is rafted over on top of the mass. The mass is generally broken up with lanes and leads of open water which are navigable to some extent. Inside of the pack ice and encompassing the greater polar area itself is the polar ice pack. Yearly accretions of ice and pressure due to currents and wind may cause piled or rafted hummocks 40 to 50 feet above sea level. There is some surface melting by solar radiation in summer, but it is only by drifting into warmer waters that much ice is destroyed. Under these conditions the floes become soft and friable and easily disintegrate under wave action. All polar ice is in motion even in mid-winter and lanes and pools frequently appear between the floes.

2. Arctic and Sub-Arctic Regions. The northern parts of Europe, Asia and America almost encircle the Arctic Ocean. Beyond these Arctic mainlands toward the pole lie various islands and island groups on the continental shelf. Annex "B" to Appendix.(page 38) indicates the areas included in the Arctic and sub-Arctic regions.

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3. Jan Mayen is a small volcanic island roughly 300 miles north and east of Iceland. It is normally surrounded by ice except during the period from May to October. The island is about 34 miles long and 9 miles wide, with an area of approximately 144 square miles. It is quite mountainous with its highest point reaching about 8,000 feet. The island is uninhabited but is occasionally visited by seal hunters, whalers and fisherman. There are no protected harbors and seaplane landings can be made only in good weather. There is a potential airdrome site, but of limited size.

4. Spitzbergen. The Spitzbergen Archipelago comprises all of the islands in the Arctic Ocean situated between 10° and 35° east longitude and 74° and 81° north latitude. Bear Island, 127 miles southeast of Spitzbergen, is included in this area. Full sovereignty of these islands belongs to Norway. The largest and principal island of this group is West Spitzbergen. Though well north of the Arctic Circle, Spitzbergen is the most accessible Arctic land by ships and certain of its fjords and bays are entirely practicable for large ships during the summer. The summer is limited to the period between early July and September. Fjords and harbors are closed by ice during the remainder of the year. The terrain in general is mountainous; however, there are a few areas suitable for construction of landing fields. Extensive construction would be required for development of facilities for all weather operations of land-based aircraft. Bear Island lies 120 miles southeast of Spitzbergen. It is about 12 miles long and 9 miles wide, tapering to a point at the south. The coast is irregular, but not fjorded; there are few sheltered and safe anchorages. The northern half of the island consists of a flat plateau at about 100 feet elevation, and is ice scoured,

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poorly drained and rocky. The southern part of the island consists of flat-topped, barren hills separated by broad, rolling valleys.

5. Iceland is an oval-shaped island roughly 300 miles long east to west and 200 miles wide north to south. The terrain is nowhere entirely flat, either on the plateau of the north-west peninsula or on the plateaus of the mainland. Numerous fjords penetrate the coast, except on the south; and many streams furrow the land with their deep valleys. Six percent of the area is forested with deciduous scrub forest generally not over 15 feet in height. The southern half of the west coast is open all winter, the northern half is exposed to the Greenland ice. The north coast is much indented, especially toward the west. Mountains descend steeply toward the sea and the entire coast is affected by ice in the winter. The western half of the south coast is dangerous to approach because of heavy surf, shoals, lagoons, flat sandy beaches which are often indistinguishable from the sea and strong currents. The southwest area in the vicinity of Reykjavik is the most accessible and suitable for airdrome construction. It will accommodate three VHB airfields.

6. Greenland, the largest island in the world, lies across the northeastern coast of North America, from which it is separated by the waters of Davis Strait and Baffin Bay. It has an extreme length of 1,650 miles north to south and an average breadth of 750 miles. The most conspicuous and unique feature of the relief of Greenland is its enormous area of inland ice filling the interior valleys. This ice cap is estimated to cover about 86 per cent of the interior plateau. Formed from accumulations of snow, it rises with easy gradients from the edges of the plateau near the coast to a great

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flattened dome in the interior with a maximum elevation of over 10,000 feet. In thickness, this ice is from 3,000 to 10,000 feet. The relatively flat surface of ice, however, is not continuous but is broken up in some places by crevasses, and in other places by ice gorges which have been formed by the summer melting. Toward the edges of the ice cap the surface is especially rugged, broken, and much crevassed. The whole mass moves outward very slowly and large tongues of the ice drain into fjords where their ends break off and float away as icebergs. The ice sheet as a whole covers completely the underlying rock surface, and only near the margins where the ice is thinner, do rocky peaks protrude up through the ice surface. The more important part of Greenland is the strip of coastland that is free from the ice. This belt is usually no more than 4 or 5 miles wide, but in a few places along the southern part of the west coast widens to over 110 miles. Great fjords penetrate this coastal land, running back to the ice margin in many places. Altogether in Greenland there are approximately 114,000 square miles of land not covered by the ice sheet. The exposed margin is essentially a region of ice-scoured rocky relief with elevations reaching 3,000 feet or more in places. The east coast has a greater variety of relief than the west. Soils are thin, coarse, and found only in relatively flat protected uplands or in delta deposits around fjord heads. Plant life, characteristically tundralike, is practically limited to those parts of the west coast not covered by ice. The most vegetation is in the southwest. Arctic tundra is the only vegetation found along the east coast. The east coast is extremely difficult to approach on account of the ice barrier which borders it normally throughout the year. The most important part of the west coast is the southern half.



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With the exception of the southern area around Julianehaab, which is much blocked by ice, this is the widest ice-free area in all Greenland and contains the bulk of the island's few inhabitants.

7. Norway. The terrain of Norway is generally mountainous, particularly in the west and north, with only one-fifth of the entire country less than 500 feet in altitude. The mountains assume the form of ridged tablelands rising to heights of 8,000 feet in the south center. The main range, Kell Mountains, of about 3,000 to 6,000 feet, run parallel to the coast from the Arctic Circle south to latitude 63°N and then divide and become the backbone of the Scandinavian Peninsula, forming the boundary with Sweden. The very irregular coast is rocky and steep for most of its extent, with chains of mountains, peaks and abrupt points intersected by numerous fjords, bays and lakes. About 2,000 square miles of Norway are occupied by glacier areas. These areas in the far north are comparatively small, and are all near the coast. Due to the warm water and air drift across the Atlantic Ocean into the shores of Norway, the coasts are always ice-free except for patches along shallow coastal stretches during unusually severe winters. Only the extreme northern tip of Norway is considered in the Arctic region; the remainder of the country, except along the southwest and southern coasts, is in the sub-Arctic region.

8. Sweden. The majority of Sweden, except for the southern tip, is in the sub-Arctic region. In general, except for the southern tip, most of the terrain is mountainous and drains into the Gulf of Bothnia which is normally ice-free from May to November.

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9. Finland. An outstanding feature of the topography of Finland is the more than 60,000 lakes that form 11 per cent of the area of that country. The remainder of the approximate 140,000 square miles of territory is composed of 35 per cent forest, 3 per cent arable, 5 per cent grassland and the remainder largely swamp. The surface of the country is table-land 400 to 600 feet above sea level, with a few elevations to 2,200 feet, and in the northwest to over 4,000 feet.

10. U.S.S.R. The U.S.S.R. has an area of over 8,000,000 square miles and roughly one-half of this huge territory is in the Arctic and sub-Arctic regions. U.S.S.R. is essentially continental; her greatest extent of coastline lies north of the Arctic Circle, where much of the sea is icebound for ten months out of the twelve. Only the port of Murmansk, under the influence of the warm Atlantic drift, remains open all the year round. Leningrad, a port on the Baltic, is usually icebound from the end of November to the end of April. The important islands in the sub-Arctic and Arctic regions are Kolguev, Novaya, Zemlya, the Northland group, the New Siberia Islands and Wrangel. Franz Joseph Land is technically a *terra nullius*, but certainly under control of the Soviets at the present time. The U.S.S.R. is a very large region of vast plains characterized by the climatic extremes in eastern Europe, western and northern Asia. The territory in the Arctic and sub-Arctic regions generally slopes toward the pole and drains into the Arctic Ocean. From Leningrad to the Yenisei River, a distance of approximately 1700 miles west to east, the area is generally lowlands with the Ural Mountains running north and south, roughly dividing this area in half. To the east, the terrain between the Yenisei River and the Lena River rises to a rough plateau generally above 1600 feet elevation. Beyond the Lena eastwards, a series of rugged mountain ranges extends

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to East Cape, the tip of eastern U.S.S.R. Arctic tundra extends along the entire length of the northern coast and varies in width from a few miles to over 500 miles between the Ob and Yenisei Rivers.

11. Alaska consists of a compact central mass and two appendages running from its southwestern and southeastern corners. The entire southern coast is very precipitous, much indented by deep fjords, with only slight stretches of beach or plain. Its elevation gradually decreases toward the Aleutians. The western and northern coasts are regular in outline with long straight beaches. At the southeastern extremity and lying close inland, is the Alexander Archipelago consisting of some 1,100 islands, large and small. Southwest of the Alaska Peninsula there are two groups of islands, the Kodiak and the Aleutian. Kodiak Island of the group of the same name is the largest and measures roughly 40 miles by 100 miles. The Aleutian Islands sweep 1,200 miles or more west-southwest from the end of the Alaska Peninsula; north of the Aleutians lie the Pribilof Islands; farther north are the Nunivak, Hall St. Matthew and St. Lawrence Islands. The Pacific mountain system of Alaska includes four ranges. The coast range of the southeastern area attains a width of 100 miles, but has no well-defined crest line. North of the coast range with which it is closely associated, is the St. Elias Range lying in the southeast of Continental Alaska. The Aleutian range, of which crest the Aleutian Islands are remnants, fills out the system near the coast. The Alaska range, which lies south of the Yukon drainage system, connects with branches of the St. Elias range. North of the Alaska range lies the vast central region of Yukon plateau. North of the Yukon plateau are the Baird Mountains and the Endicott range. Finally north of this range is the Arctic slope region, a sloping

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plain to the Arctic Ocean. Chief among the rivers of Alaska is the Yukon, more than 2,000 miles in length and which practically bisects the main peninsula. This river is navigable for small river boats practically the whole length of the river to Whitehorse, Canada. The period of navigation on the Yukon is from four to four and a half months during the summer. The second largest river, the Kuskowim is navigable for about 100 miles. The major part of Alaska is sub-Arctic in nature and Arctic conditions prevail only along the west and north coasts above 60°N latitude. Point Barrow, farthest north, is ice-locked for about 10 months of the year. The Bering Straits are generally free of ice from June or July till October.

12. Canada. The Dominion of Canada comprises the northern half of the continent of North American, excepting for Alaska, Newfoundland and Labrador. Newfoundland, (including Labrador which belongs to Newfoundland), is a separate dominion, but is included in this study of Canada. The major portion of Canadian territory lies within the Arctic and sub-Arctic regions. On the east coast, the Gulf of St. Lawrence with its much indented shores and the coast of Nova Scotia and New Brunswick supply numerous harbors, the northern ones closed by ice in the winter, but the southern ones open all the year around. On the Pacific, the coast line is deeply fringed with islands and fjords which provide well-sheltered harbors, ice-free the year round. Hudson Bay, an inland sea 850 miles long and 600 miles wide, has its outlet through Hudson Strait to the Atlantic Ocean and has long been navigated by trading ships and whalers. It is closed by ice except for four months during the summer. More than half of Canada's surface slopes gently inwards towards the shallow Hudson Bay, with higher margins to the southeast and west. The central area of Canada is drained towards Hudson Bay.

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The Mackenzie River flows northwest to the Arctic Ocean and the St. Lawrence River flows northeast to the Atlantic Ocean. Canada is strewn with lakes of all sizes, from bodies of water hundreds of miles long to ponds lost to sight in the forest. There are no permanent ice sheets known on the mainland with the exception of glaciers in the Rocky Mountains along the west coast. Some of the larger islands to the north are partially covered with glaciers on their higher points. The Rocky Mountain region as a whole includes several parallel ranges but two principal mountain axes form its ruling features -- the Rocky Mountains proper and the coast ranges. Between them are many other ranges shorter and less regular in trend. This belt of mountains is about 100 miles wide and extends the entire length of Canada on the west. The highest mountains are near the southern end of the boundary separating Alaska from Canada. There are no significant mountains in eastern Canada, the highest point on the coast of Labrador being less than 6,000 feet.

## II. WEATHER AND CLIMATE IN THE ARCTIC AND SUB-ARCTIC REGIONS

13. The Arctic and Sub-Arctic Areas. A serious error, frequently appearing in discussions or plans for Arctic strategy and operations, is found in the widespread belief that all land masses and water bodies north of the Arctic Circle are characterized by a truly Arctic climate. Climatic zones rarely conform to latitudinal boundaries even when based on a single factor, such as an annual temperature regime. The Arctic and sub-Arctic areas, indicated on map, Annex "B" to Appendix (page 38) extend southward from the pole to points having the following temperature qualifications: places having no more than one monthly mean temperature up to 50°F are considered Arctic, and places having less than four monthly mean temperatures of 50°F or above are considered sub-Arctic.

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14. In simple terms, it may be said that the Arctic has long bitterly cold winters and brief cold summers. Comparatively, the sub-Arctic may have colder but shorter winters and short warm summers. The northern hemisphere's "cold pole" is in the northcentral area of the Greenland ice cap at about 10,000 feet above sea level.

15. Notable is the fact that the only Arctic terrain presently owned by the United States is a narrow strip of tundra along the northern and western coasts of Alaska. Greenland stands out as the eastern buttress of the North American Arctic and it dominates the Eurasian Arctic weather.

16. Weather Conditions Affecting Air Operations. Throughout the year the low pressure trough extending northeastward into the Eurasian Arctic from the semi-permanent Icelandic cyclonic center is frequented by the greatest storm activity in the northern hemisphere. The Arctic maritime regions of Davis Strait and Baffin Bay, the North Atlantic and the Arctic Seas north of Eurasia are subject to more cloudiness, precipitation, icing danger and gales both at the surface and aloft than are the drier, more anticyclonic sections of the continental regions and the relatively solid pack-ice of the American Arctic basin. However, unless tropical air at very high levels has been drawn into an Arctic storm, aircraft can usually top all cloudiness and icing at about 25,000 feet above sea level.

17. In the Arctic, away from major storm tracks, the middle and late winter (January-May) is the best season for flying. Clear skies and relatively few storms; infrequent fog and icing in clouds, constantly frozen soil, lakes, rivers and sea surface; and a fairly consistent snow cover provide advantages for landing on skis and for flights over widespread areas of the

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Arctic. Midwinter darkness is partially offset by excellent visibility and the snow-intensified illumination obtained from bright stars, moonlight and aurora.

18. Summer (mid June through August) is the worst season for flying in the Arctic, especially from the standpoint of reconnaissance. Storms are weak but numerous, and much moisture is carried poleward by prevailing southerly winds in the sub-Arctic. Cloudiness at low and intermediate flying levels, fog, icing, turbulence and uncertain soil and ice conditions provide hazards which offset favorable factors such as constant daylight, moderate temperatures, light winds and considerable areas of snow-free land. Although surface visibilities improve with the onset of sub-freezing temperatures, autumn storminess results in continued poor flying weather which sometimes persists through November.

19. The sub-Arctic is subjected to extreme variability in temperature, sudden storms and constant cold winds in exposed places during winter. Its winter is not so long as that of the true Arctic, November through April usually being considered the winter months; June, July and August the summer months; and May, September and October the transitional months.

20. Polar aircraft operations will be affected at one time or another by the following factors especially characteristic of the Arctic and sub-Arctic: (1) possible temperatures down to 75° F (generally warmer aloft up to 10 or 20 thousand feet than at the surface in winter); (2) icing in clouds the year round but at a maximum in summer and autumn; (3) smoke and fog contaminating the air for several miles around settlements in the calm conditions of extreme cold; (4) ice-crystal surface fogs and clouds aloft, seriously limiting visibility;

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(5) strong local winds and drifting snow in mountainous regions and on exposed coasts; (6) magnetic storms and snow static which often interrupt radio and ground communications.

21. Considering the practicability of sub-stratospheric and stratospheric flights above Arctic storminess, the best aircraft route from the United States to Eurasia from the weather point of view starts from Great Falls or Fargo and skirts northern Greenland en route to Moscow. For a return flight the best Asiatic departure is from northeastern Siberia and thence up the Mackenzie valley or across central Canada to the United States. This latter route can be flown more than 50 per cent of the time in winter at low levels.

22. Weather Conditions Affecting Ground Operations. The major factors affecting ground operations in the Arctic and sub-Arctic are: temperature, wind speed, precipitation, snow cover and soil trafficability. These factors are closely related to the seasonal trends of cyclonic and anti-cyclonic conditions already described in connection with air operations.

23. Wind-chill resulting from the combined effects of moderate to strong winds and sub-zero temperatures is probably the worst handicap imposed on personnel assigned to ground operations in Arctic and sub-Arctic coasts. Temperatures below 50°F, normally experienced during calm or very light wind conditions at interior locations, do not seriously restrict ground operations with properly winterized equipment.

24. Most of the year the soil in the Arctic is frozen or snow-covered and is trafficable only for specialized equipment; skis, snowshoes, sleds and tracked vehicles. In some places, the snow becomes packed hard enough in the late winter and spring so that light equipment can move over the surface if



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provided with cleats or chains. Drifting of snow, or wet heavy snow such as occurs in exposed places or maritime sections may impede traffic greatly but actual snowfall is light over much of the true Arctic.

25. Normally during the summer season, traffic is limited to highly improved roads and the limited-depth inland waterways. Even the best roads may be impassable during spring thaws or in summer rainy spells. Freezing of waterways and the ground in November greatly facilitates mobility. By December the ice is thick enough to bear normal military loads and the ice 4 to 8 feet thick, remains until the thaw in late April, May or early June.

26. The Arctic plains of Canada, the Greenland ice cap and some semi-permanently frozen areas of the Arctic seas allow almost unrestricted travel by specialized over-snow vehicles during the winter months.

27. Arctic - Conditions Affecting Sea Operations. The major factor affecting sea operations in the Arctic is the ice-cover of the Arctic Ocean and adjoining water bodies. Ice conditions depend principally on temperature and wind regimes, but ocean currents together with the geographical distribution of land and water masses are almost equally important. In general, the land-fast ice and ice of only seasonal importance begins to freeze in October or November and commences to break up in May or June. Along the Arctic coasts the ice is usually at a minimum in August, but ice conditions are always uncertain as the floes are subject to movement by strong winds. Even the main body of the Arctic Ocean pack-ice is seldom free from movement, however, ice fields in the area  $80^{\circ}$  to  $85^{\circ}$  N and  $120^{\circ}$  to  $130^{\circ}$  W are well consolidated and relatively immobile. Approximate limits to navigation, under the most favorable conditions

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are indicated by the floating ice pack, (See Map, Annex "C" to Appendix ). These limits are based on scant data, largely because Arctic waterways have never been thoroughly investigated.

28. Weather Service Facilities. At the present time there are 43 weather reporting stations established in the Western Hemisphere north of 60° N. Some twenty odd more are proposed as the minimum necessary for effective forecasting. Even with this minimum number of stations in operation, daily weather reconnaissance flights will be required to provide the necessary information for sustained military operations in the Arctic and sub-Arctic regions.

29. Capabilities of U.S.S.R. Weather Service. The Soviets have considerably more experience in operating in the Arctic area than the United States. It will be noted that most of the rivers north of 60° drain into the Arctic Ocean, and it is along these river arteries that the Soviets have established most of their weather observation stations. The number of stations that they have above 60° is not known exactly; however, it is estimated that there are approximately 360 at the present time; approximately 135 reports are available daily. During the past war, reports from most of these stations were received on an exchange basis with the Soviets.

30. Because of the low priority that the Soviets have placed on weather information for military operations and the lack of land line teletype facilities, the receipt of weather reports from most of these outlying stations has been rather unreliable, and in most instances, reports from at least half the stations were garbled in one way or another. In some instances, the

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elevation of the stations is unknown, and the reduction of the pressures to sea level is useless. However, these stations have been ordered to report and do so to the best of their ability.

31. The accepted practice of the Soviets of drawing synoptic charts by taking weather observations according to time zones limits the usefulness of the charts and the observations. However, with careful selection of reports as to the time of observation, a synoptic map for the entire Soviet area can be produced. As well as can be ascertained only a limited number of raob stations and rawin stations are in operation. Most of their upper-air observation stations use pibals and take airplane soundings. In summarization, it can be said that the Soviet weather service is not as effective at the present time as that of the United States. However, they are potentially capable of equalling the best American efforts. In forecasting for the route between Siberia and Alaska, they will have the advantage. Even though they have no intelligence reports other than weather reconnaissance over our territories, nevertheless, having seen the weather first and knowing from past experience what generally happens to weather systems of that type, they will be in a position to make reasonably accurate forecasts for air and ground operations over Alaska, Canada and the northern United States.

III. ECONOMIC

32. Very few critical materials are found in the area under discussion. These are the cryolite mines of Greenland, uranium mines of Canada, and the high grade iron ore mines of Norway. Other than these all materials are more cheaply and readily obtained in other areas.

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#### IV. LINES OF COMMUNICATIONS IN ARCTIC AND SUB-ARCTIC REGIONS

33. Annex "C" to Appendix "(page 39), illustrates graphically the lines of communications in the Arctic and sub-Arctic regions.

34. Railroads. Alaska's railroads consist mainly of a few individual lines with short spurs, which extend from the coast to interior points. The most important line is that which connects Whittier and Anchorage with Fairbanks (700 tons/day). Canada has an effective railroad net in the southern portion; however, only two routes exist toward the north. One route through Edmonton to Peace River and Dawson Creek, and the other from Hudson Bay Junction to Churchill. There are no railroads in Greenland nor Iceland. U.S.S.R. has a well developed rail net in the west; however, the double-tracked Trans-Siberian railroad is the sole railway connecting eastern U.S.S.R. with the rest of the Soviet Union. As such it serves as the main land route for supplies flowing to the Soviet Far East. There are no known railroads in northeastern Siberia. The railroad terminals on the north coast in the west are Murmansk, Arkhangel'sk, and Kara. There is a railroad net in Finland with terminals on the Gulf of Bothnia and the Baltic Sea. The net is connected with that of western U.S.S.R. Sweden has a rail net with one line running northwest terminating at Narvik, Norway, and a line connecting with the Finnish rail system at the head of the Gulf of Bothnia.

35. Roads. Although the roads in Alaska have been greatly improved and extended, there is no over-all first class road net connecting the major towns. The military Alcan highway is the only overland road connection between Alaska and the United States. Canada's road net is largely confined to the extreme southern part. Except for the Alcan highway, there is

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no significant road into northern Canada. There are no roads in Greenland or Iceland except those of a very local nature. U.S.S.R. has an extensive road net in the west, with terminals of first class roads on the north coast at Mar'yan-Mar, Mazen, Arkhangel'sk and Onega. In northern Siberia, so far as is known, only insignificant trails exist. Petsamo, on the Barents Sea, is connected with Rovaniemi, Finland, which is on a rail line connecting U.S.S.R., and Finland. Sweden has a good road net along the Baltic Sea and Gulf of Bothnia. Norway has a primary road extending along the western coast as far north as Bodo.

36. Inland Waterways. Two rivers in Alaska, the Yukon and the Kuskowim are navigable for four to four and a half months during the summer. The Yukon is navigable for small boats as far as Whitehorse, Canada, while the Kuskowim is navigable for 100 miles. In Canada, the most significant waterway is the Mackenzie River which is navigable for flat bottom river boats from East Providence to the Arctic Ocean. The river ice breaks up about the middle of May and freezes about the middle of October. In the U.S.S.R. there are four river routes connecting the Trans-Siberian Railway with the Arctic Ocean. The waterways that form the routes are the Ob, Yenisei, Lena, Kolyna and Anadyr Rivers. All of these rivers are navigable for a few months in the summer only. The types of traffic these waterways will accommodate vary from flat bottom boats to ocean-going cargo vessels. Another inland waterway from the U.S.S.R. to the Arctic Ocean is the White Sea canal which connects Leningrad with the White Sea. Traffic is restricted to the summer months. During the winters when the rivers are frozen, good highways are provided for sleds and other vehicles capable of operating on snow and ice.

37. Sea Routes. Shipping is the principal means of transportation to Alaska. The Aleutians and all ports to the east and

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south are ice free the year round. The mouth of the Yukon is generally free of ice by June and is open till October. The Bering Strait and the north coast of Alaska is open only for 2 or 3 months between July and September. Transportation by sea to the arctic areas of Canada is extremely limited. Traffic into Hudson Bay is limited to only 4 months during the summer. The northwest passage through Baffin Bay, Lancaster Sound and to the west along northern Canada and Alaska has been undertaken by exploring expeditions only and is open only a very short period and even then ice breaker assistance is required. The sea route to a short stretch of the west coast of Greenland can be maintained the year round with ice breaker assistance in the vicinity of Godthaab. The south coast of Iceland is normally ice free the year round for shipping. The sea routes to Spitzbergen are closed by ice except during a short period between early July and September. The north coast of Norway is ice free the year round and it is claimed that the Russian port of Arkhangel'sk is open the year round by the use of ice breakers. The Northern Sea Route across Arctic Russia crosses five seas, the Barents, Kara, Laptev, East Siberian and Chuckchee, and enters a sixth, the Bering, through the Bering Strait. Vil'kitskiy Strait between the Kara and Laptev Seas will continue to be the critical point of the entire Northern Sea Route. Another bottleneck on this route is Laptev Strait, which is limited to ships not exceeding a draft of 21.3 feet. An alternate route is through Sannikov Strait, where the depth is about 30 feet, but ice conditions are less favorable. Ice conditions vary from year to year, but under good conditions this route can be kept open with the aid of ice breakers for about two and a half months. In 1941, 3 merchant ships, strengthened against the ice, made the trip from Arkhangel'sk to Vladivostok in 6 weeks, a distance of 6,250 miles. The shortest alternate maritime route is 10,800 miles. The port at Petropavlovsk in

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southeastern Kamchatka can be maintained open the year round with ice breakers. This also applies to Vladivostok and Okhotsk.

V. AIRFIELDS AND OTHER INSTALLATIONS OF MILITARY IMPORTANCE

38. The location of airfields that have all-weather runways or complete facilities or both are shown on Map, Annex "C" to Appendix (page 39). In addition to these airfields there are a large number of landing grounds which have a suitable landing area but do not have all-weather runways nor complete facilities. In the arctic and sub-arctic regions of the U.S.S.R. there are known to be over 150 landing grounds, but the majority of them limited to about 3,000 feet in length. In addition, there are many more emergency type landing grounds scattered throughout. In Canada and Alaska there are over 60 landing grounds, plus numerous emergency fields. The number and location of airfields in Greenland and Iceland are limited due to terrain features as well as the logistical problems. Spitzbergen has a few potential airdrome sites, but nothing of a permanent nature has been established. It will be noted that the United States has an excellent system of air bases in Alaska and the Aleutians, while the known airfields in northeastern U.S.S.R. are few and are primitive according to American standards. The logistical support for operations from northeastern Siberia would be a tremendous problem as the Trans-Siberian railway, the North Sea route and supply by air are the only feasible routes of supply, and their capacities and flexibility are limited.

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ANNEX "B" TO APPENDIX

ARCTIC AND SUB-ARCTIC REGIONS

(Photostat)



ANALYSIS OF ESTIMATED RELIABILITY OF INFORMATION January 1944

Map of Arctic and Sub-Arctic Regions

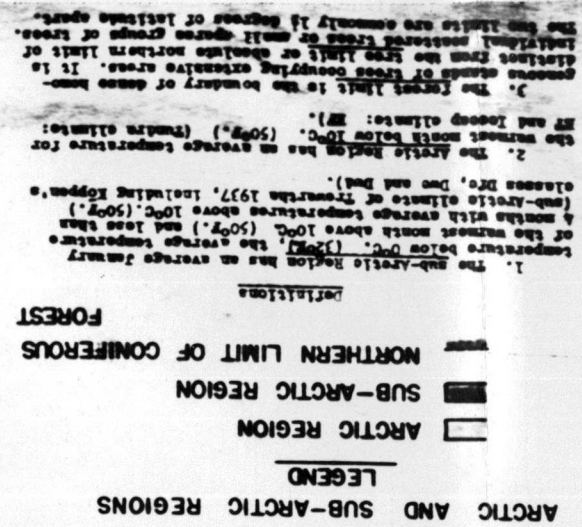
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	Source	Reliability Rating	Source	Reliability Rating
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5	5	77	5	77
6	6	77	6	77
7	7	77	7	77
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98	98	77	98	77
99	99	77	99	77
100	100	77	100	77

- KEY TO RELIABILITY RATINGS
1. Evaluation of Information as to Source
- A. Completely reliable
  - B. Usually "
  - C. Fairly "
  - D. Not usually "
  - E. Unreliable
  - F. Reliability cannot be judged.
2. Evaluation of Information as to Truth, Credibility or Probability
- 1. Report confirmed by other sources
  - 2. Probably true report
  - 3. Possibly true report
  - 4. Doubtfully true report
  - 5. Improbably true report
  - 6. Truth cannot be judged.



- Map of Arctic and Sub-Arctic Regions
- National Boundaries
- 1. Schurman, Edward A. Climate of North America according to the Köppen classification. Geographical Review Jan. 1941.
  - 2. Köppen's Climate Regions of the North. Great Soviet Atlas, Vol. I Scale 1:80,000,000 Plates 38-39.
  - 3. Trenorth, G. T. An Introduction to Weather and Climate 1937. Climate of the North, after W. Köppen p.390.
  - 4. Climatology and Typical Synoptic situations of the North Atlantic. Mass. Instit. Tech.
  - 5. Ibid. North Pacific Area.
- Forest Limit
- 6. Great Soviet Atlas Vol. I
    - a. Maps 121-122 Scale 1:15,000,000
    - b. Maps 123-124 " 1:7,500,000
  - 7. Map of Alaska. U. S. G. S. Dept. of Interior. Scale 1:5,000,000 1927, (with green overlay of forest types. No date or source given for overlay).
  - 8. Forest classification of Canada and Coast of Labrador south of Lat. 75° Scale 1:6,336,000. Department of Mines and Resources. From Bull. 89, Forest Service by W.E.D. Halliday.
  - 9. Ranges of Various Tree Species in Canada, Manuscript, on same base map as preceding by W.E.D. Halliday, Privy Council Office 1943.
  - 10. Air Navigation Edition, National Topographic Series. Dept. of Mines and Resources. Surveys and Engineering Branch, Hydrographic and Map Service. 1942. Sectional maps with 15 corrections by Lt. A. L. Washburn, 1943.
  - 11. Ordnance Survey of Great Britain, sectional maps of Scotland and adjacent islands.
  - 12. Norges Barrskog - Oplysninger om skogforholdene i Norge. Oslo 1930.
  - 13. Hesselman, Henrik. Barnekomne arealförteckning på tall, grön och barrskogsbestånd i Norrland och Lappland. Medd. f. Statens Skogsförhållanden anstalt 28:731-753, 1935.
  - 14. Atlas of Finland. Edited by Hitting, Cajander, et al. Pub. by Geographical Society of Finland 1925. Plates 13-14 Scale 1:1,000,000.





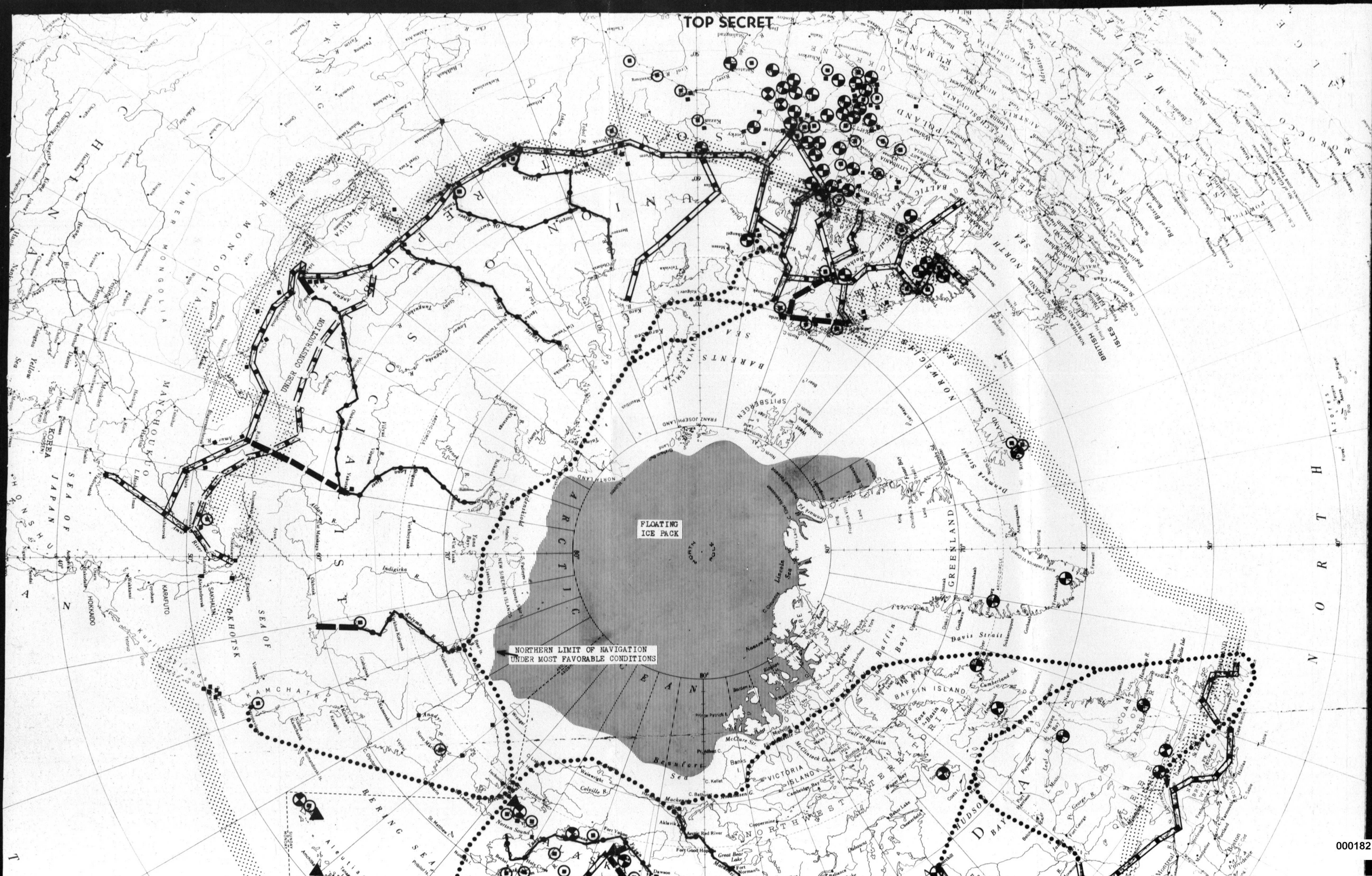


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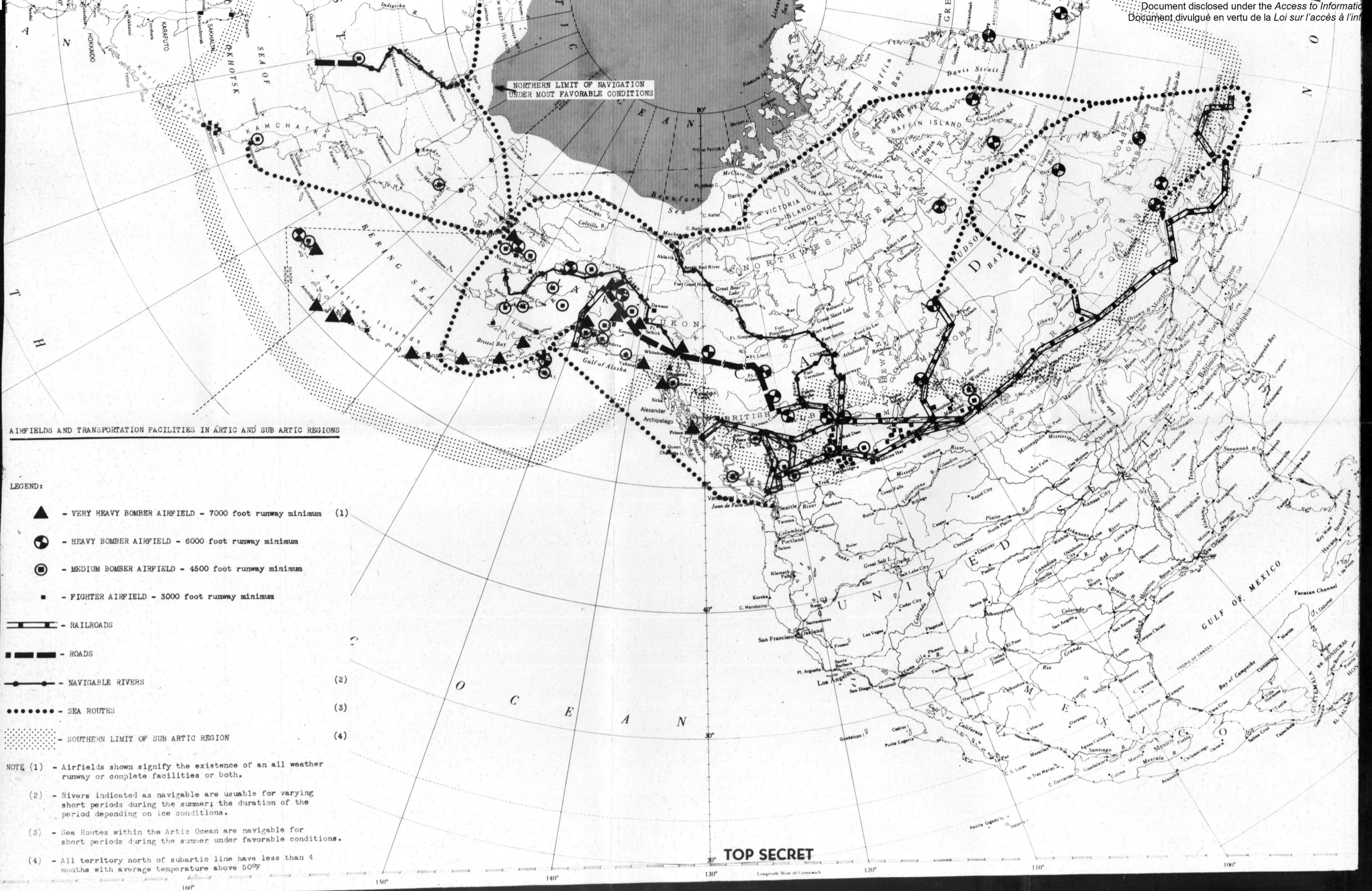
ANNEX "C" TO APPENDIX

AIRFIELDS AND TRANSPORTATION FACILITIES IN ARCTIC  
AND SUB-ARCTIC REGIONS

(Photostat)







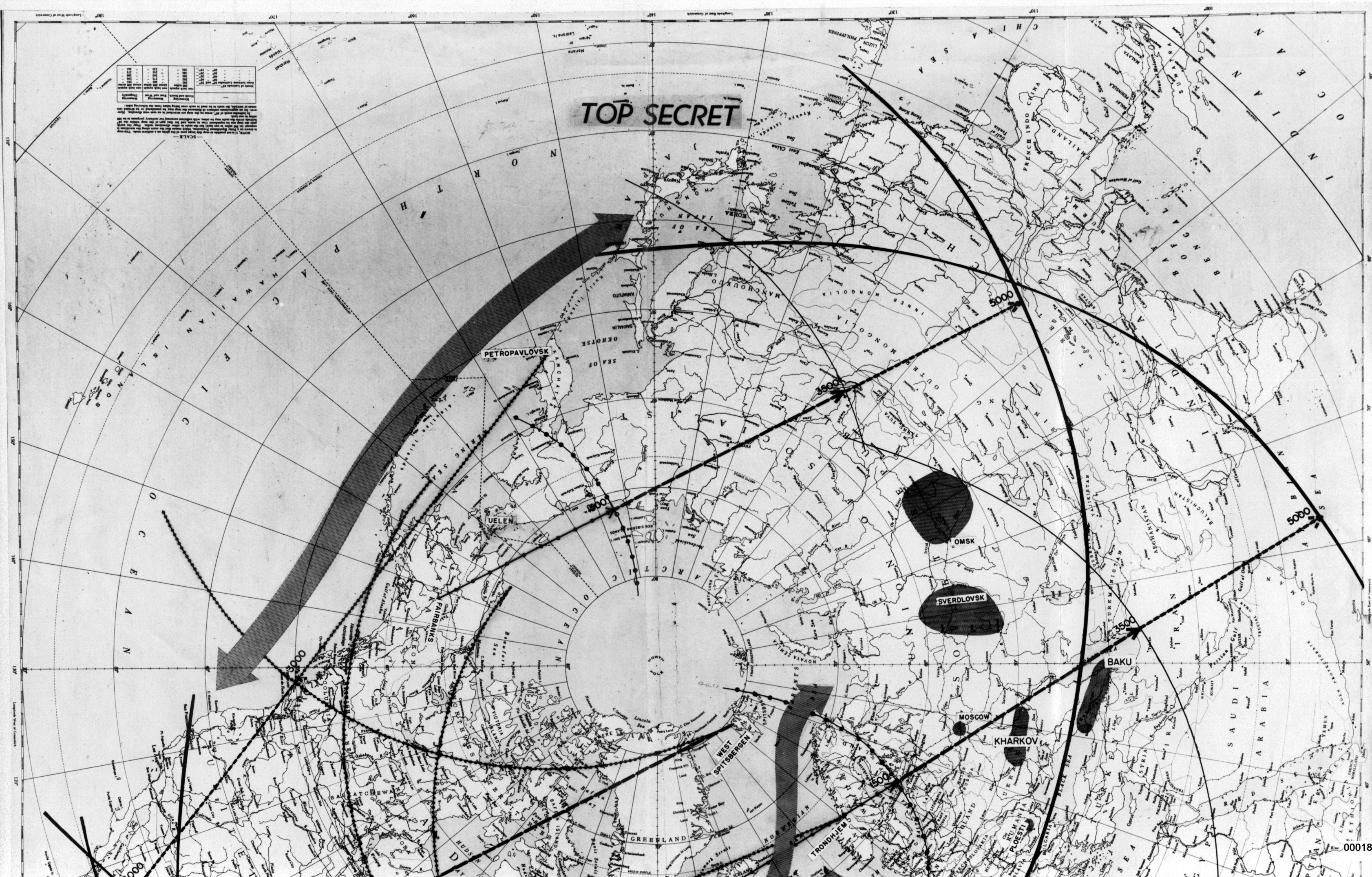
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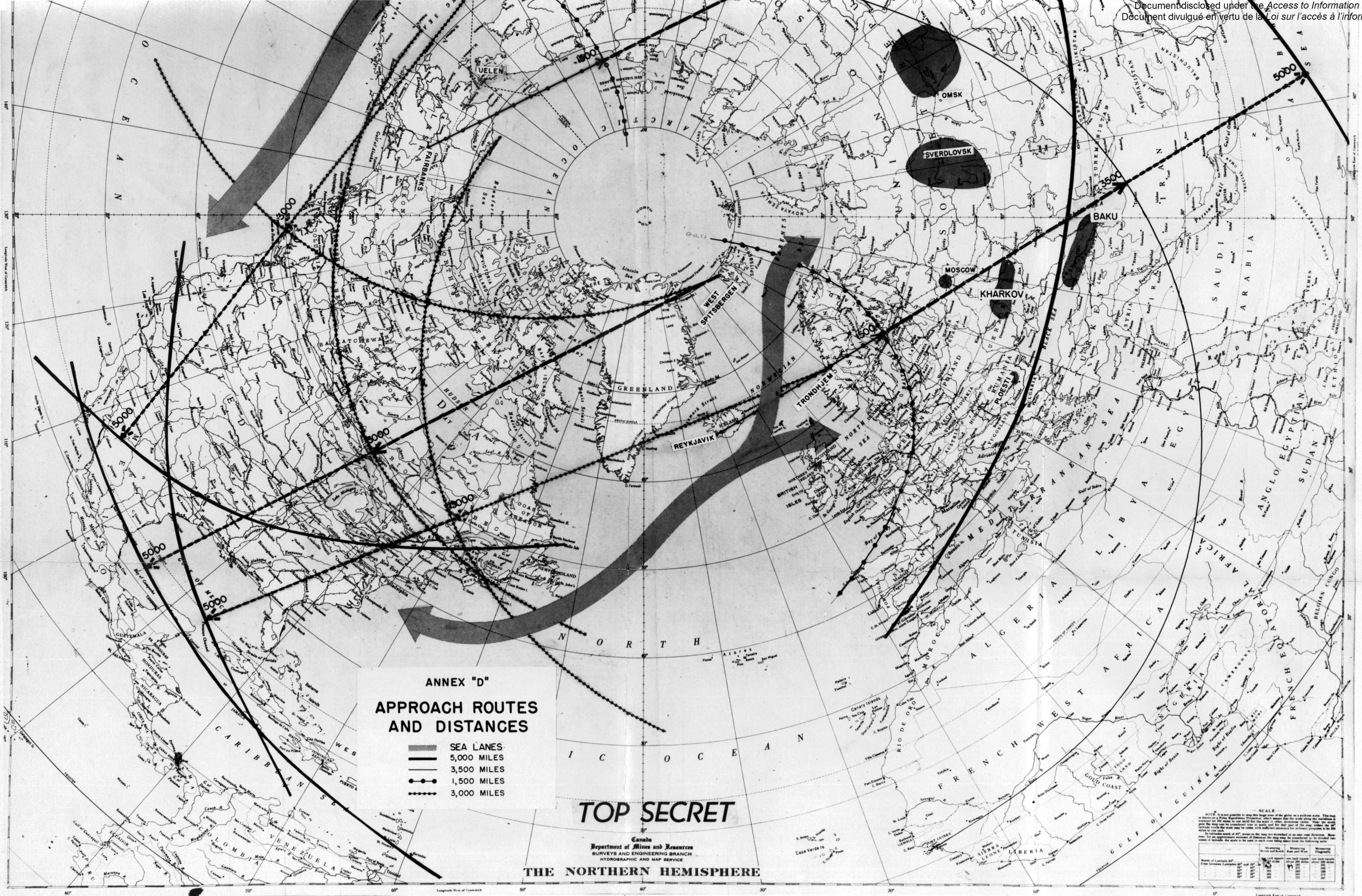
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26 November 1946

AN ESTIMATE OF FACTORS AFFECTING THE OUTBREAK OF WAR  
AND THE TIME AVAILABLE FOR PREPARATION

The conclusions reached in this paper and the considerations from which they are drawn have validity only so long as our western democracies make it clear that we are always as a last resort willing to fight if our basic interests and ways of life are seriously jeopardized and that we possess a war potential adequate to achieve ultimate victory. Well considered foreign and domestic policies consistent with the foregoing must be supported by military power sufficient to guarantee our ability to bring to bear our potentially victorious strength but not so great as to be provocative. It must be recognized that the raw opposition of mere force to force may lead ultimately only to war, and also that a depression of the standards of life to achieve military forces in being may seriously weaken political resistance to Soviet Communism. The solution lies in careful and continuing evaluation of many complex factors -- military, economic, political and psychological -- in the light of both short and long term requirements.

1. There are several ways in which war between Russia and the principal nations of the non-Soviet sphere might evolve. The two most probable ways are either (1) an accidental outbreak developing spontaneously from some particular incident or (2) as the result of planned and considered action by the U.S.S.R. These situations are analyzed below in order to estimate the likely period of warning available to the western democracies in which to mobilize their war resources. Of utmost importance in this regard is the necessity for the democracies unmistakeably to recognize the conditions which portend hostilities.

2. Incidents which might develop into accidental hostilities include possible conflicts between Soviet satellites and small non-Soviet nations, or misguided Soviet moves which, contrary to Soviet expectations, force the western democracies to resort to military action. While the possibility of accidental war must always be kept in mind, it seems unlikely because of (a) the degree of Soviet dominance over satellite governments, and (b) the flexibility of Soviet policy and the effectiveness of the Communist propaganda machine which permit political withdrawal from difficult positions without serious internal loss of face on all except fundamental matters. The possibility of the "accidental" outbreak of war will be highest during the period of solution of the difficulties arising immediately from World War II such as Trieste, the

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Dardanelles, Korea, and the settlement of basic German and Japanese problems. We have hopes that this period will not last longer than another eighteen months to two years but this cannot be guaranteed.

3. The intensity of the Russian impulse towards expansion has not yet been fully defined but will be tested in many ways within the next several years, in the efforts to settle the peace treaties, the Austrian and German problems, atomic control measures, etc. We must therefore consider this period of test as a special case during which the factors affecting the outbreak of planned war as discussed below will apply with less definition than in the longer term. Should, in the next several years, Soviet willingness to fight rather than to compromise on her requirements for the settlement of post-World War II problems outweigh the many reasons which should induce her to remain peaceful for at least the next decade, it is likely that the western democracies would have only a very short warning before Russia resorted to military action.

4.. Planned war if eventuating would result from Soviet-Communist expansion, either geographically, ideologically, or in combination. Some of the traditionally fundamental causes which have led to war in modern history are not conspicuous in the Russian picture as viewed at this time. For instance, there appear to be no basic economic reasons to impel Soviet expansion in the next decade nor is there pressure arising from over-population of Russian territory. Contrasted to this, however, we must recognize the totalitarian nature of the Soviet government and the fact that historically this type of control has generally led to war. The Soviet urge for expansion arises principally from two factors:

a. The ideological factor stemming from the profound belief of the leaders of Soviet Communism in their ideology that conflict between capitalism and communism is inevitable, that Soviet communism cannot for long remain static, and, consequently, communism must be spread as widely as possible, and

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b. The military factor evidenced by the Soviet preoccupation with defense in depth.

It is conceivable that the latter factor is largely generated by the former, that it is magnified in importance for internal and external propaganda purposes, and that the basic objective is a secure cushion of distance around her homeland in preparation for the time that war, brought on by her ideological policy, occurs.

5. During this decade the world political situation may remain more or less in its present strained balance or there may be unmistakable evidence that one or the other of the antagonistic systems is achieving success by means short of war. Possible development may then be in accordance with:

a. A trend of success by the western democracies whereby the Soviet program is either held in check or progressively diminished, or

b. A trend of success by the Soviets to bring about progressive deterioration of the position of the democracies.

6. If the world political situation develops in accordance with trend a, then planned war is likely to eventuate only if the Soviets remain wedded to the idea of physical and ideological expansion. In such a case, the Politburo may make the decision to precipitate a planned war. Soviet military action under these conditions may be most successful the nearer it can come to being a complete surprise to the democracies.

7. If development proceeds along the line of Soviet success, Russia is likely to be content to continue her progress by means short of war.

8. Planned war is probable only if and when the democracies feel that their way of life has become so jeopardized that they must stand and fight or accept Soviet domination. The crystallization of such a decision by the democracies would be slow and implementation could not be undertaken rapidly. Under such conditions, warning of the outbreak of war should be longer, varying, at a maximum, from the time required by the democracies to become well prepared, to the minimum which would be the time required by the Soviets to become convinced of a new determination in their adversaries and then to take the

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initiative. The effective warning period might thus vary from as much as two years as a maximum to as little as several months as a minimum.

9. The broad considerations given above must be read in the light of several other possibilities. If at any time the Soviets came to believe that the willingness of the U.S. and the British Commonwealth to fight Russian expansion had deteriorated to the extent that portions of western Europe or the Middle East could be overrun without bringing on global conflict, then they might undertake military action to that end, with little warning and before they had become fully prepared for war involving the world. Again, should the Soviets be successful in achieving a system of control which would preclude the democracies using the atomic bomb in quantity against the U.S.S.R. for several years after an outbreak of war, the Soviet Union might consider herself well enough prepared to go to war at any time with the objective of gaining sufficient advantage to impose a stalemate. This might be followed by the offering of terms to the democracies.

CONCLUSIONS

10. "Accidental" war is unlikely now and the probability thereof should diminish as post-World War II problems are solved. If it should occur, there will be little or no warning.

11. After the present unstable period, planned war may occur but it is unlikely until the Soviet Union has greatly strengthened her over-all war making ability vis-a-vis the western democracies. It will take about ten years before this can be accomplished.

12. By the time the Soviets are ready for a planned war, two major possibilities exist:

a. If the western democracies have been gaining or holding their own in world affairs, war would come on Soviet initiative and effective warning would be short -- a few weeks to some months.

b. If the Soviets have been gaining ground, war may evolve from a gradually stiffening resolution on the part of the democracies to resist

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further aggression by force of arms. The effective warning would be longer and would vary between as much as two years as a maximum and a few months as a minimum.

13. It will be important to maintain an adequate balance of priorities between short-term objectives, which are principally forces, installations and production in being, and long-term objectives, which include research and development, stockpiles of raw materials, economic military potential, standardization, and military reserves of personnel and equipment.

14. It will be necessary to keep these conclusions under constant and critical review with the objective of avoiding that complacent rigidity of thinking which tends to develop once an estimate, such as the one above, is accepted and more detailed planning, particularly logistical planning, begins.

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26 November 1946

STRATEGIC GUIDANCE FOR LONG-RANGE PLANNING

An attempt to anticipate developments in the next ten years is fraught with difficulties and many uncertainties. This memorandum is an attempt to set down the perspective in which the enclosure should be viewed and the importance of flexibility of thought and continual searching reexamination of the initial conclusions reached.

During a ten-year period, there will be major fluctuations in the basic factors, such as the industrial and political strength of the non-Soviet world, which are the background for the attached paper. Unfavorable conditions at some particular time may temporarily make the course of action in the enclosure seem impossible of achievement. The danger is then that steps will be taken which create an even more adverse situation rather than first reexamining the soundness of the conclusions in the attached paper, or attempting to recoup the ground lost, or both.

There will be major fluctuations in the treatment of mass destruction weapons, which might conceivably involve a complete cycle including agreement, implementation, and subsequent breakdown of controls, followed by an arms race. There are likely to be major fluctuations in the situation in those areas particularly stressed in the enclosure including India, the Middle East, Western Europe, the U.K. and the U.S.

The economic, psychological and political aspects of another major war are items for the most serious consideration in making plans for such an emergency. It is possible to win the war and lose the peace due to deterioration as to these factors in the non-Soviet world. For example, the nature and extent of the harassment of the peoples of countries overrun initially by the enemy must be carefully considered.

It seems certain that, regardless of any agreements on control of mass destruction weapons, the outbreak of hostilities would precipitate a race to obtain these weapons. This race would be a first charge against our resources of the same order as the basic undertakings listed in the attached paper.

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NOTES FOR STRATEGIC GUIDANCE IN LONG-RANGE PLANNING

1. Basic Undertakings.

At present the basic undertakings of the non-Soviet powers in case of Soviet armed aggression in about 1956 against the U.S. and the British Commonwealth are estimated as follows and will be a first charge against our resources:

- a. Secure the war-making potential of North America and, as far as possible, of the United Kingdom.
- b. Secure the Dominions, the balance of the Western Hemisphere and, if appropriate, India and Japan provided these latter countries are sympathetic to the non-Soviet cause.
- c. Initiate as rapidly as possible and carry on an offensive of increasing intensity by air bombardment from available bases including those in North America, United Kingdom, Middle East, India (if available), and perhaps in the Far East.
- d. Maintain the security of areas in the Middle East as a base for offensive action.
- e. Maintain essential sea and air communications.
- f. Commence the mobilization of the entire non-Communist world, politically, economically and militarily, directed toward adding moral and physical weight to the battle against the Soviets and ensuring the best possible foundation for a lasting peace upon termination of war.

2. Certain Specific Tasks.

The effective carrying out of the Basic Undertakings will require that at least the following initial tasks be performed:

- a. Defense of North America and the British Isles.
- b. Take all measures feasible, safely to evacuate any occupation forces in danger of being overrun by Soviet forces.
- c. The early establishment of minimum adequate forces in Greenland, Iceland, the Azores and Alaska.
- d. Maintenance of minimum essential lines of communication.

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e. Reinforcement of the Mid-East. At or close to the outbreak of hostilities, it will be necessary to make the decision as to whether the Mediterranean Sea route can probably be kept open. Retention of this route will be most helpful but will require securing the Straits of Gibraltar, and other essential positions.

f. Immediate and effective mobilization of civil defense forces in North America and the U.K., including those necessary to guard against the use of weapons of mass destruction by the enemy.

### 3. Priorities of Areas.

Having in mind that the principal initial offensive operations against Russia will be air, the above can be arranged roughly in the following priority groupings:

- a. Security of North America and U.K. and their communications and Retention of the Middle East and of a line of communications thereto.
- b. Use of India, if available, as an offensive air base, Retention of the Japanese Islands with communications thereto, and Retention of the Mediterranean Sea route to the Mid-East, if possible.

### 4. Time Factor.

The period of warning available to the non-Soviet powers is likely to lie between a few weeks and two years. This factor is critical.

5. If warning is insufficient to allow expansion of war-making industry and training, forces (particularly air forces) will be inadequate for the basic tasks; moreover, political agitation on a world wide scale may tend to disperse such forces as are available. In this event, much will turn on the attitude of the French and Germans outside the Soviet controlled zones of Europe. If warning is short the non-Soviet powers will face great difficulties in concentrating their forces sufficiently quickly to meet the enemy's threats. Under such conditions there would be a very critical initial phase of the war in which the non-Soviet powers would be fighting for survival; the climax of this phase would come at an early date. In such an eventuality only the vital, first

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priority tasks can be undertaken, lines of communication must be kept as short as possible, and dispersion of effort ruthlessly guarded against. The disadvantages of a short warning period may in part be alleviated by intelligent stockpiling and the practical implementation of standardization.

6. If we were fortunate enough to have eighteen months' warning, the forces available to the non-Soviet powers might be sufficient for the initial corporate undertakings noted above and in general the resources including most equipment, excepting aircraft, should be adequate.

7. Early Offensive Action.

During the first critical phase in which the non-Soviet powers will be on the strategical defensive, it will be essential to engage in air bombardment in order to blunt the enemy's offensive capability before the period of climax is reached, to delay his advance in the Middle East and the buildup of his offensive against the United Kingdom, to sustain the morale of the non-Soviet powers, and to shake the conviction of the Soviet leaders and the Soviet people that they can gain easy or quick victory, if at all. The last point will be more effective if combined with political and psychological warfare campaigns.

8. The effectiveness of this strategic offensive will depend very largely on whether mass destruction weapons are used, assuming that no international control has been established in the intervening period.

9. We visualize that under certain conditions, it may be to the advantage of the enemy not to initiate the use of these weapons. The arguments pro and con from the Soviet point of view are set forth as follows:

FOR

a. With even a relatively limited capability for application of atomic weapons or BW on vital targets in the U.K. and in North America, the Soviets might believe that surprise or early attack with them would so shake the resolve of the non-Soviet powers, particularly in conjunction with expected resounding Soviet military successes along more orthodox lines, that the will of the non-Soviets to continue fighting would break and capitulation take place;

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this notwithstanding early efforts at similar reprisals by the non-Soviets. If the Soviets could presume any likelihood of knocking out atomic bomb stockpiles or manufacturing plants in an initial attack, they would be more likely to apply the above reasoning.

b. If a relatively large capability of effective use of either atomic weapons or BW existed, a capability which might be believed to be necessary by the Soviets before they would start a planned war, the inducements to use them would be greater than a, above. Under such circumstances the reasons in a would pertain, plus the direct likelihood that U.K. and perhaps North American production, as well as morale, could be so crippled as to require early the capitulation of the non-Soviet powers.

c. It must be assumed for Soviet planning purposes that the non-Soviet powers are likely to use such weapons at any time. Hence, there exists a case for using them first.

AGAINST

a. Non-Soviet stocks of atomic weapons will probably greatly exceed Soviet stocks.

b. Sufficient Soviet forces should be available to try for the deliberate reduction of the U.K. by intensive use of other more orthodox weapons, such as guided missiles, etc.

c. Initial non-use of mass destruction weapons by the Soviets may lead to U.K. intervention to restrain the U.S. from initiating their use for fear of retaliation on the U.K. This might cause a serious rift between these Allies.

d. If the resolution of the non-Soviet powers to carry on to the bitter end a war once begun appears to the Soviets to be in doubt, they may believe that their initial orthodox success (with the threat of the use of weapons of mass destruction in the background) can place them in a position from which they can offer terms which will be accepted by the non-Soviets, as the alternative to stalemate or long drawn out total war. Even if the non-Soviet powers chose the latter alternative, the Soviets might believe there would exist a

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strong possibility that their opponents would split over the choice of either initiating use of atomic bombs (with the threat of Soviet reprisals being particularly heavy on the U.K.), or accepting stalemate or at least a long war.

c. Forcing the non-Soviet powers to use such weapons first may bring about a reduction in the support given these powers by elements of their populations, either from moral repugnance on the part of these elements or from fear of Soviet reprisals.

10. The non-Soviet powers would, in the event the outbreak of hostilities is not accompanied by Soviet use of weapons of mass destruction, be faced with the decision whether or not to initiate the use of them themselves. The arguments for and against the early use of these weapons may be summarized as follows:

FOR

a. The early use of such weapons may be the only alternative to defeat or, at best, the acceptance of virtual stalemate with the heavy destruction of at least the United Kingdom a likely contingency.

b. The war will be shortened and may, in fact, only be won by use of atomic weapons.

c. The atom bomb offers a probably best method of breaking down the morale and will to fight in the U.S.S.R.

d. A preliminary calculation indicates that it would take at least five months to take out even Priority 1 Soviet oil targets presently known by using H.E. alone.

e. Soviet air defenses will be least efficient in the early months of the war.

f. The period of heavy bombardment of the U.K. can probably be shortened.

AGAINST

a. The Soviets will be free to use such weapons of mass destruction as they have available on the U.K., and on North America without experiencing any adverse psychological impact to their cause.

b. We cannot rely in planning and long-range preparations on such weapons being available in the early stages if certain forms of international control are agreed to.

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c. Public support of the war effort in U.S.A. and the British Commonwealth may suffer through fear of Soviet reprisals or by alienation of the support of certain people on moral grounds.

11. Whether or not weapons of mass destruction are used, we must bear in mind that the organization of defensive measures against their use will be a necessary continuing and burdensome requirement involving the expenditure of considerable resources and manpower.

12. Development of Allied Strategy.

Having survived the first critical period of the war, the non-Soviet powers will be faced with the problem of how to bring the war to a successful conclusion with the enemy in occupation of a large part of Europe and Asia. Our object will be to force the enemy to capitulate either by negotiation or through political disintegration. The latter eventuality might create such formidable post-war problems that a negotiated capitulation of the U.S.S.R. might be preferable.

13. In general terms the methods available to achieve this end, not necessarily in order of priority, are:

- a. The destruction of the enemy's war-making capability.
- b. The destruction of the enemy's morale.
- c. The defeat of the enemy's armed forces.
- d. The occupation or liberation of key areas and administrative centers.

We can not assess the priority to be given to each method.

14. Taking account of the enemy's sources of manpower both in the U.S.S.R. and in occupied countries and the logistic problems raised by the distances involved, it is evident that the total defeat of the enemy's armed forces unassisted by attacks on his morale and war industries is not within the capabilities of the non-Soviet powers.

15. Given the use of bases in the Middle East, the effective reduction of the enemy's war-making industrial complex should be within our capabilities unless Soviet defensive measures become much more effective than

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can at present be foreseen, the enemy is able in the time available to place much of his essential industry underground, or his offensive measures reduce our own offensive capabilities to the point of stalemate.

16. As to morale, the use of mass destruction weapons against the enemy population might have decisive results.

17. Our present estimates indicate that in order to maintain our offensive capabilities it will be necessary to fight the enemy on land in the Middle East and also somewhere in Western Europe, possibly South of the Pyrenees. It is not possible at this stage to say where the final main effort would have to be applied or what ratio that effort should bear to the total effort by air, sea and land.

18. The occupation of large areas in Eurasia appears also to be beyond the capabilities of the non-Soviet powers, although occupation of limited areas could be accomplished.

19. We conclude that victory should come by a combination of all four methods described above. We consider it would be useful to undertake further studies as shown in Annex I, and that these problems should be mutually examined at an appropriate time.

Miscellaneous Items of Strategic Guidance in Preparation for the Contingency of War

Political Measures

20. Sustained measures must be taken to combat the spread of Soviet Communist ideology, particularly in France, Germany, Italy, Spain, the Middle East, India and Japan. This must go hand in hand with a continuing improvement of the economic condition of these countries as mentioned below.

21. A firm stand in international affairs on all matters affecting our strategic interests is essential particularly support for Turkey and other Middle East countries against Soviet domination by coercion or force.

22. Continuing efforts must be made, by propaganda and any other available means, to introduce doubt in the minds of the leaders of the Soviet Union that conflict with the West is inevitable, that the Soviet-communist ideology is the

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foreordained solution to the political organization of the world and that the U.S.S.R. can in any way expect to be the victor in a war against the non-Soviet powers. Similar efforts must be directed towards the people of the Soviet Union and in Soviet dominated states to lessen the political support they give the leaders dedicated to Soviet communism and to impel them to demand the peaceful evolution of world affairs instead of the resort to revolutionary means.

#### Economic Measures

23. Every effort must be made to support the economic revival and the continued economic stability of the Western European countries, including Germany. The fostering of Scandinavian trade with Western Europe may help to prevent Soviet economic domination of these areas.

24. The achievement of adequate economic revival in Japan and the improvement of trade in the Far East will be helpful in reducing the Soviet-communist threat.

#### Military Measures

25. It will be necessary always, if war is to be forestalled or at least not invited, to maintain forces in being and a mobilization potential sufficient to give support to a firm stand in international affairs, to deter Soviet expansion by armed force and to give moral support to the non-Soviet countries.

26. Coincidentally, it will be necessary to carry on the highest order of research and development to insure that Soviet mass strength can be overcome by the potentially greater technical ability of the non-Soviet powers. It must be recognized that samples of proven new weapons are not an adequate substitute for a supply of weapons in the hands of troops trained in their use. Hence, a difficult problem of timing production is posed.

27. Of transcendent importance, in this situation where adequate warning of Soviet intentions is vital, is the requirement to improve to the limit possible Intelligence agencies and means of collecting information inside the Iron Curtain.

#### Over-all Considerations

28. While it does not appear possible to determine firmly a complete strategic concept at this time, the following seems to set forth summarily and

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in general terms the sense of the preceding pages.

"In conjunction with Allies, to destroy the will and ability of the Soviet Union to continue the war by:

a. Stabilizing the initial Soviet offensive while retaining areas vital to our continuance of the war and ultimate victory and the communications thereto;

b. Initiating at the earliest practicable date a strategic bombardment offensive to paralyze and destroy the Soviet war effort and reduce the Soviet will to fight, while continuing to secure and maintain the key areas and mobilizing and concentrating the means to clear Soviet forces from key areas held by them;

c. Continuance of strategic bombardment together with clearance of selected key areas held by the enemy;

d. A final stage, not clearly capable of definition at this time, the nature of which is dependent primarily on conditions in Western Europe, the Soviet Union and the non-Soviet Allies in the closing phases of the war. It will probably include mop-up operations and some occupation of Soviet or liberated areas, or both."

The four stages set forth above would overlap as to timing and should be viewed with great flexibility.

29. Objective study of the picture presented by a future war between the Soviet Union and the non-Soviet powers, leads to the conclusion that such a war, unless won by extraordinary means in a very short space of time, can be disastrous to civilization as presently conceived. The exhaustion brought on by such a war will likely complete the destruction wrought during the war. Military action alone can neither prevent such a war nor end it rapidly enough to guarantee against a collapse of civilization. The most reasonable assumption is that military preparedness in its broadest sense can do little more than to postpone conflict. This postponement must be utilized for the enlightened accomplishment of a political solution such as the regime of collective security conceived in the Charter of the United Nations, which may then, in turn, lead to the eventual effective abolition of war.

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ANNEX I

Miscellaneous Studies

1. Military Forces availability and shortages - U.S., U.K., Middle East, Commonwealth
2. Oil Reserves
  - (a) Russian and European
  - (b) Anglo-American - including common fuel policy for modern engines
3. Economic Resources of U.S. and U.K. and Commonwealth
  - (a) Industrial
  - (b) Raw Materials
4. Stockpiling Coordination of policy and requirements U.S. and British Commonwealth as affecting -
  - (a) Raw Materials
  - (b) Military stores and equipment
5. Spain Study of political, economic and military problem
6. Strategic Bombing Study of target systems in Russia and Europe  
Effort required  
Deployment of forces and logistical implications
7. Training Estimate of British requirements in U.S. and Canada
8. Strategy Development of our offensive strategy, including political and psychological offensive.
9. Political Possibilities of alleviating disadvantages of war at short notice by creation of Western bloc in the next ten years
10. Propaganda Examination of ways and means of combatting Russian propaganda in peace
11. Civil Defense Protection of Industry and Civil population against mass destruction weapons
12. Subversion Development of plans and effective procedures to minimize the Soviet capabilities for inflicting damage by subversive and Fifth Column activities, both before and after the outbreak of hostilities.

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APPENDIX "A"

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BRITISH - CANADIAN - UNITED STATES STANDARDIZATION

PERTINENT FACTS AND CONSIDERATIONS BEARING ON THE PROBLEM

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1. It is believed that the following facts and considerations are pertinent to the problem of standardization:

a. During the next 10 years, it is unlikely that either Great Britain, Canada or the United States will become involved in a major war without the certainty of the early and active support of the other two states.

b. Soviet operations early in the conflict can deny to the non-Soviet states practically all supplies and raw materials from Europe, Iran, Iraq and Turkey. India and the Far East generally to include Southern China will remain open at least in the early stages. No reliance can be placed upon a regular flow of traffic from any Mediterranean ports.

c. The United Kingdom and United Kingdom industry will be greatly pre-occupied in holding and supporting the home "front line." Due to the effort required from the beginning for this purpose, combined with the possible scale of enemy operations, we cannot place the same reliance on British industry as in World Wars I and II. The special industrial arrangements which the British must make to meet their particular situation will to some extent be influenced by the type and timing of the industrial arrangements of the U.S. and the Dominions. It will also be affected by the adaptability to British needs of supplies and equipment potentially available abroad.

d. While final analysis may show that United Kingdom sources cannot be counted upon for a steady flow abroad of supplies and munitions of war, it may be that considerable excess to Britain's own needs will be produced on a basis of considerable fluctuation as to quantities of any particular item.

e. The production of the United States and the Dominions should in 1956 be capable of a steady and rising flow in spite of enemy efforts. On the outbreak of war there will be immediate operations in widely scattered areas around the periphery of Eurasia. Initially at least, the forces in these areas, the equipment, procedures and ways of doing things will be primarily British, except for the Western Pacific and Bering Sea areas. The forces progressively moved to the areas of operations will

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probably be in considerable part U.S. and Dominion. The supplies and equipment available will probably be in most part from the industrial complex of North America. If the above analysis is correct, we must envisage a war in nearly all areas with major reliance for munitions resting on North America.

f. In a major emergency there will be an over-all shortage of supplies and equipment, perhaps lasting over the first two or three years. There may also be a maldistribution of the available supplies and equipment as to national forces and as to physical location, when measured by the priorities of the basic undertakings and tasks to be performed. It would appear sound to eliminate as far as practicable the obstacles in the way of rectifying any maldistribution.

g. The Dominions are at present "in the middle," particularly Canada, when they attempt to proceed with their military plans. They are bound to the United Kingdom by having similar organizations, tactics, etc., and by dependence, to a great extent, on British equipment. They are likely to be fighting side by side with the British in another war. But their forces are just as likely to be fighting side by side with the U.S. forces and the probability is that they will be dependent to some extent at least on North America for equipment.

h. Canada is a special case among the Dominions. She has her Commonwealth responsibility and she shares with the U.S. a corporate responsibility for defense of North America. Her industry is an integral part of the industrial complex of North America.

i. In World Wars I and II the U.S. did not engage in active fighting for some time after the Commonwealth became engaged. In World War II the U.S. did, however, partially commit her industry to the Allied effort early in the war. It is for consideration whether reliance by Canada and Britain on U.S. industry in a future emergency might not be warranted. The analysis of the way in which a major war might come indicates that the U.S. would be involved quickly. The most probable difficulty lies in the timing of the initiation of preparatory measures such as partial industrial mobilization. Short of political agreement of a type which seems impracticable and perhaps undesirable, there seems no way to guarantee coordinated preliminary preparation. However, if measures taken by any one nation (including production of munitions) are adaptable to the needs of the others, the situation is

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bettered considerably.

j. It is obvious that any program of standardization is a progressive matter and may be indefinite in length. In peacetime such military programs cannot be pursued in a vacuum. They are in practice subservient to the political and economic policies of the nations concerned regardless of their justification on the basis of national security. Any program involving contact with another nation is, in a democracy, peculiarly sensitive to the impact of internal political factors. Hence, over a long period, the ability to implement any program must be recognized as being subject to fluctuations. Foreign policies of the nations concerned are rightly determined by many factors other than strictly military ones and may involve actions such as trade treaties or other exchange arrangements with third parties. These actions in turn, may reasonably cause one of the participants in a standardization program to qualify its participation, at least temporarily, due perhaps to security considerations.

k. The basic objective is a peaceful and orderly world; support of the United Nations is of vital importance to the British Commonwealth and to the United States. Hence, it is undesirable that any program should be implemented in such a way that it could be considered as contrary to the spirit and intent of the United Nations Charter. It is clear, however, that understandings reached between Canada and the U.S. are in accordance with precedent, and logical in the interest of defense of North America. It is also clear that understandings between Canada and Great Britain are in accordance with precedent, and logical in the interest of Commonwealth security. Hence, if the principle of standardization is accepted, the program may be able to progress with continuity and considerable impetus over a long period even though it may be that at times it is guided more by bilateral than by tripartite relationships.

2. In light of the above, Appendix "B" enunciates policies and principles designed to facilitate the frank exchange in peacetime, through a flexible yet definite machinery, of opinion and information in order to ensure effective cooperation or common action in an emergency.

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APPENDIX "B"

BRITISH-CANADIAN-UNITED STATES

STANDARDIZATION

1. OBJECTIVE

a. It is considered that in the event of war the very closest cooperation would be needed between Great Britain, Canada and the United States. This should culminate in cooperative or common action for the mutual defense of the three nations. The situation might arise whereby reliance for continuing the war would depend on the effort of industries in the United States, or in Canada, or other parts of the British Commonwealth. Alternately, the situation might be such that U.S. or Canadian forces operating far from the Western Hemisphere might be supplied for certain items from Commonwealth sources nearer the scene of operations.

b. An examination of the cooperation needed shows that it should aim at the following objectives:

- (1) The Army, Navy and Air Forces of each country should be able to operate with the ~~corresponding~~ services of the others and in certain cases as integrated forces.
- (2) Reserves of materiel should be held to allow operations to be carried out. In view of the short time available for preparation, the importance of reserves has increased, and the quantity which should be held in peace would be greater than ever before. To achieve economy, the services of the three nations should be prepared to use each others equipment - if necessary at short notice with the minimum of dislocation, reorganization or retraining.
- (3) Supplies should be delivered to forces easily and economically. It would obviously be desirable for each service to use common items, but where this is impossible the number of dissimilar items should be kept to a minimum. Closely related to the problem of supply is that of repair and maintenance. It is desirable that repair and maintenance organizations should be capable of handling items for each nation.
- (4) To allow a rapid turnover of industry from civil to war production,

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planning would be required to ensure that in all fields the available resources are used in the most advantageous and economical way to meet operational requirements.

c. The objective will be <sup>attained</sup> ~~obtained~~ only if it is based on a full and frank exchange of opinion and information. The responsible authorities in each nation should be aware of the opinion of the responsible authorities of the other two nations before adopting any major policy concerning material, equipment, organization or operational procedure which might affect common action. An understanding is required between the responsible authorities of the three nations to this effect. (Note: The field of intelligence is considered beyond the scope of this paper.)

d. The success of any program of standardization will depend upon the initiative of subordinate agencies and even of key individuals in the services of the nations concerned.

## 2. COLLABORATION AND STANDARDIZATION

It is essential therefore that anticipatory planning should include reasonable and practicable measures to effect "collaboration" and "standardization" between Great Britain, Canada and the United States. As used in this paper, collaboration is construed to mean the coordination of research, development and war production, standardization to mean the adoption of the same or interchangeable types of major and vital items of equipment and armament, and the use of the same basic techniques in essential items of tactics, training, communications and terminology. Standardization does not necessarily imply the creation of absolutely identical military organizations, staff procedures, tactics or training, or the adoption of identical equipment (such as clothing) which does not require maintenance and replacement peculiar to itself.

## 3. AIMS

The general problem is considered under the following headings:

- a. Categories under which the problem may receive more detailed consideration.
- b. Broad principles applicable to each category.
- c. The organization which, utilizing agreed broad principles as terms of reference, should furnish the machinery for detailed implementation of the objectives.

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#### 4. CATEGORIES

The problem of collaboration and standardization falls naturally into the following categories:

- a. Collaboration in research and development.
- b. Standardization or interchangeability of equipment.
- c. Standardization of tactical doctrine and common basis for training.
- d. Standardization on common operational procedures.

#### 5. PRINCIPLES

It is considered that the following broad principles are applicable:

##### a. Research and Development

- (1) This field represents particular problems due not only to the nature and scope of the subject itself, but also to the different ways in which this matter is handled in the different nations. It is believed that collaboration can be considered under at least three headings:
  - (a) Truly combined collaboration, such as Operation MUSKOX.
  - (b) Research on a particular project (essentially one of straight forward development) undertaken by one nation which keeps the others informed of its progress with the project culminating in the adoption by all concerned of the finally developed product.
  - (c) An effort by two or more nations along the same line (particularly in the case of more complex problems) with mutual exchange of information, but without attempting in other ways to eliminate duplication; this to continue until the nature of a final product is sufficiently clear so that a determination can be made as to the primary responsibility for final development and perhaps for mass production.
- (2) It is considered that the objective might be achieved if collaboration goes forward under all three headings indicated above, the method adopted in any particular case depending on the nature of the project, national policies in connection therewith, and practical aspects of the situation. It is fundamental that understandings should be reached

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on military characteristics or performance specifications as guides to research and development. This implies collaboration in the matter of priorities.

b. Standardization or Interchangeability of Equipment

- (1) Standardization or interchangeability of equipment is the objective to be achieved in the field of materiel. It should be accomplished progressively and with full appreciation of the manifold complexities involved. It should aim at reaching a situation where all services involved have access to the best types of equipment produced, where all major items of equipment in use are interchangeable from the users' standpoint, and where as far as possible, individual items are subject to maintenance from spare parts produced in other nations, and repair in each other's workshops. Standardization need be aimed at essentials only. Items such as uniforms, and similar military items which could be replaced by different types need not be standardized.
- (2) A reasonable initial approach would appear to be the standardization of types of equipment or munitions which would simplify supply lines, stockpiles and strategic reserves. For example, it is considered that budgetary requirements would make it impracticable to decide immediately on a particular type of motor transport, gun, or aircraft for a particular purpose. However, a step towards the objective would be the standardization of automotive vehicles to the extent that all might utilize the same grades of petrol, oil and lubricants and, within types, the same sized pneumatic tires. In guns, it might be possible to envisage the use of the same types of ammunition regardless of minor differences in the guns themselves. As for aircraft, an important initial step would be the utilization of interchangeable fuels, and, where possible, <sup>specific components</sup> ~~spare parts~~, such as tires.
- (3) However, in general, it is believed that emphasis should be placed less on efforts to standardize immediately available equipment than to collaborate in new developments and the production thereof in order that

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the most desirable equipment may be standardized for future use.

From this long-range view, early consideration should be given to the adoption of basic mechanical and electronic components, of basic industrial standards and processes such as screw threads, ball bearings, wire and sheet guage, design strength criteria, basic tooling, and metallurgy.

c. Tactical Doctrine and Common Basis for Training

- (1) Tactics and Technique. The major and general principles of tactics and technique, as developed in the coming years and taking into account the perfection of new weapons and equipment, should be the subject of continual exchange with a view to facilitating progress towards uniformity. A detailed examination needs to be made to determine those principles, procedures and processes which should receive complete standardization in order to attain the over-all objective set forth above. While it is not contemplated that standardization will necessarily extend into the field of minor tactics, full exchange of information on all levels would facilitate operations. The exchange of instructors, students and instruction material among service schools would contribute.
- (2) Training. There should be full exchange of information and doctrine concerning both the training of the rank and file of all services and also small unit training in order that in combination with the higher instruction received by commanders as in (1), above, units would be expected to react similarly and play roughly equivalent roles regardless of origin. The exchange of observers and written training material and participation in schools, tests or maneuvers would contribute.

d. Common Operational Procedures

- (1) Organization. Units of the various services in each country should be so organized that each is roughly equivalent in military force to that of similar units of the other countries. In the event of "special" units being organized, full exchange of information should be made

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regarding their capabilities.

- (2) Terminology. Standardization of terminology would be of great benefit. A glossary of standard names should be prepared and progressive steps to bring national designations into line should be initiated. This should include weights and measures.
- (3) Maps, Charts and Manuals. Standardization of maps, charts, and manuals, as to scales, symbols, classification, projections, should be undertaken with a view to achieving uniformity in essentials.
- (4) Staff Work. A high degree of similarity in organization, training, designation of sections, terminology, and procedures would be desirable to permit effective common action.
- (5) Communications. Uniformity in signal communications is essential.
- (6) Procedures. It may be impracticable to standardize procedures completely. They vary between services of any particular nation and even between commands of a particular service. However, an examination should be made to determine those procedures, such as control of aircraft and signal communications, whose standardization is essential to integrated operations and to the use of bases and installations of one nation by forces of another nation. It is worthy of note that standardization of equipment leads naturally to standardization in procedure.

## 6. CONSIDERATIONS

a. In considering the creation of machinery necessary to accomplish implementation of the objective, it is believed that the categories of tactical doctrine and training offer no particular difficulties. Exchange of students between various schools of the participating countries and interchange of information and doctrine will further the understanding already established during World War II. It is considered that existing agencies within the respective services of each country are competent to carry on this work.

b. However, in the fields of equipment and research and development, it is recognized that a program of standardization is fraught with practical, political

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and industrial difficulties. Such a program might be attacked as constituting a military agreement of a type contrary to the spirit and intent of the United Nations Charter. Standardization undertaken on a basis of purely military considerations could conceivably result in an adverse effect on the objectives of the foreign policies of one or more of the nations concerned.

c. On the industrial side of standardization particularly, it is necessary to consider protection of the countries concerned from a financial and economic point of view. Particular attention should be paid to the proprietary rights of citizens holding any procedure, a design or patent. Hence, the necessity to provide safeguards for the prevention of the appearance on the commercial market of such information or material in unfair competition with the lawful holders of the rights involved. Cognizance should also be taken of probable national reservations in making certain information available.

d. The ultimate integration of war production is a most important element of the problem. Such an integration raises fundamental problems affecting national economies of which detailed consideration is beyond the scope of this paper. However, it is believed that effective progress in detail through the organization outlined in paragraph 8 below should move logically towards a situation giving at least partial integration of production in war.

e. Although the problems of achieving standardization through purely military channels are considerable, the fact should not be overlooked that an approach to many problems is possible through civil and commercial channels. There is a natural tendency towards standardization of items in common use, and the establishment of international standards is the function of the appropriate international bodies which, by encouragement, could further the standardization of items required for military purposes.

f. Recognition of the limitations of a program of exchange of information and opinion is essential in order that there may not arise misunderstandings and even recriminations which disrupt the efficiency of the program. Complete exchange of information and opinion on all details is not practicable in fact, even between subordinate agencies of one service of a nation; hence, probably the initial objective

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to strive for is a mechanism that covers the field more like a grid than like a carpet. There may at times be further gaps in the coverage due to industrial, political and security aspects. To avoid misunderstanding and suspicion, such difficulties should be frankly recognized as and when they arise. It seems that each category into which the problem of standardization is divided should be examined to determine the most feasible check-points at which an exchange of information and opinion can be effectively accomplished. For example, it seems that the standardization of an item just prior to production would be one of the appropriate check-points in the chain which extends from pure science to mass production of any particular item.

#### 7. CONCEPT OF ORGANIZATION

In light of the discussion above, it is concluded that the machinery to implement the objective should adhere to the following concept:

- a. There should exist parallel national agencies following agreed common policies and principles rather than a single common organization.
- b. The problem should be separated into categories and decentralized as appropriate within each service or nation, but whatever machinery is set up should be capable of promptly resolving any differences which might arise.
- c. Existing agencies should be used in so far as practicable.
- d. Agencies utilized initially should be kept to the smallest practicable number with the understanding that contacts with other agencies within a particular national service or nation would be arranged as required.
- e. The agencies of each nation should be known to the others, collaboration and standardization being achieved by informal visits, exchange of ideas, and exchange of officers on the level necessary. A tentative list of parallel agencies is shown in the attached Annex.
- f. National policies as established by each country with reference to release of classified information should be furnished to the agencies concerned.
- g. It should be the responsibility of each service to take initial action to send information concerning its own service policy to the services of the other two countries. At the time this information is sent it would appear convenient to invite

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the other services to express their opinions on the information.

8. MACHINERY FOR THE EXCHANGE OF INFORMATION

a. Collaboration and standardization to be successfully carried out should be founded on sound and simple machinery for the exchange of information. It is also essential that the exchange of information be followed by frank expressions of opinion thereon; these should culminate in the adoption of common policies.

b. The problem is one of establishing a mechanism capable of handling a wide variety of subjects in appropriate ways. It is not possible to lay down the exact machinery required until further discussion between the services has taken place, but in general it might be organized as follows:

- (1) Through liaison officers or attaches in each capital, or
- (2) Through national inter-service "steering committees" following common policies and principles and working in close collaboration for the purpose of general coordination of standardization. These committees might function in their own capitals or alternately might be situated in one of the three capitals in order to effect closer cooperation, or
- (3) A combination of the above.

c. The number and complexity of items involved in standardization is so large that the funnelling of all matters through a national body in each country is likely to involve considerable manpower requirements and, furthermore, impose an unnecessary delay on simple matters. It might therefore be argued that liaison officers and attaches alone should be used. With this system, however, there is the disadvantage that certain awkward questions might become stalemates and there would be no continuity of action and no organizations through which coordination could be achieved. It is therefore considered that national steering committees should be constituted to ensure control. In order to keep such committees small and workable, their responsibilities should be general only, and liaison officers should be utilized in each capital to handle matters which could conveniently be dealt with by direct contact.

d. The fact that the framework for such steering committees already exists in Washington in the form of the British and Canadian Joint Staff Missions in close touch with appropriate U.S. authorities, constitutes a strong argument for locating the

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committees at least initially in Washington. It is possible that in the future, political considerations might dictate their removal from Washington; the same considerations would probably preclude their transfer to London and in this event Ottawa is seen as the "reserve site."

e. In view of the foregoing, it is considered that British and Canadian Standardization Steering Committees, based on the existing Joint Staff Missions, should be established in Washington. Their Secretaries would be in close touch with those of the appropriate U.S. authorities. The heads of the British and Canadian Service Delegations would occupy the same positions as they do now, each assisted by a small staff of officers; these working informally with U.S. service representatives would collaborate in the general coordination of standardization.

f. It is not intended that all correspondence on the interchange of information should be channelled through the steering committee; rather, it is visualized that only the more troublesome matters should be so dealt with. Routine discussions between the three countries should take place on the appropriate levels once a project is under way. The steering committees would provide a forum for inter-nation discussion and, where possible, a tribunal for resolution of differences. They would also be in a position to organize visits and meetings of experts whenever these were needed. Should agreement on a particular matter not be reached by the steering committees, they should refer the matter to their respective services concerned, with appropriate recommendations that action be taken to eliminate the deadlock.

g. In addition, there should be liaison officers in each capital on whom the main responsibility for maintaining personal contacts with their colleagues in the other countries would devolve. It is not intended that they should all be "experts;" rather, they should be staff officers with sufficient technical experience to enable them to keep in touch with what is going on, and to be able to introduce experts at the right time and place when their presence appeared to be necessary. It is visualized that these liaison officers would form part of the Joint Staff Missions where these exist or alternatively part of the service attache staffs.

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ANNEX

(See Para 7 e)

It is envisioned that the below listed agencies will initially represent services and countries as indicated: (This list is tentative and subject to confirmation. It will not be interpreted to limit the number of agencies which eventually may become involved, nor the creation of additional agencies should such be deemed necessary by any service or nation.)

a. Tactical Doctrine, Training and Operational Procedures.

	<u>Great Britain</u>	<u>Canada</u>	<u>United States</u>
Army:	Director of Military Training	Deputy Chief, General Staff (B)	Director of Organization and Training, WDGS
		Asst. Chief Naval Staff	
Navy:	Deputy Chief of Naval Staff	<del>Director of Weapons and Tactics</del>	Office, Chief of Naval Operations
Air Force:	Assistant Chief of Air Staff (Operations)	Deputy Air Member of Air Staff	Assistant Chief of Air Staff-3

b. Standardization and Interchangeability of Equipment.

	<u>Great Britain</u>	<u>Canada</u>	<u>United States</u>
Army:	Director of Weapons and Development	Deputy Chief, General Staff (B)	Director of Service, Supply and Procurement, WDGS
Navy:	Deputy Controller (of Production)	Chief of Naval Administration and Supply	Office, Chief of Naval Operations (Logistics Plans Section)
Air Force:	Director General of Equipment	Deputy Air Member for Supply and Organization	Army - Assistant Chief of Air Staff-4 Navy - Assistant Chief of Naval Operations for Air
Interservice:	Joint Stores Standardization Committee		Joint Logistics Committee

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c. Research and Development.

	<u>Great Britain</u>	<u>Canada</u>	<u>United States</u>
Army:	Director of Weapons and Development	Deputy Master General of Ordnance (C)	Research and Development Division, WDGS
Navy:	Deputy Controller (Research and Development)	Director, Scientific Research and Development	Office of Naval Research
Air Force:	Assistant Chief of Air Staff (Technical Requirements)	Deputy Air Member for Research and Development	<u>Army</u> - Assistant Chief Air Staff for Research and Development  <u>Navy</u> - Office, Chief of Naval Operations (Readiness Section)
Interservice:	Defense Research Policy Committee	Director General of Defense Research	

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COPY NO. 15

RECORD OF FIRST MEETING  
1400 hours, 12 November 1946

The planners agreed that the matters to be discussed at this and further meetings would be considered as in the highest category of military security and that no information obtained in the course of the meetings would be divulged to representatives of any other nations.

It was further made clear that the number of persons having knowledge of the planners' conversations were extremely limited in each of the nations involved and that papers being circulated were similarly limited except in the case of papers which gave no indication that they were being used in the planners' discussions. In the latter case, some of these papers are being circulated within national staffs under ordinary staff security.

In the discussion on procedure, it was suggested that the effort be to obtain a meeting of the minds on the subjects under discussion to the limit possible, but that there would be no hesitancy in expressing divergencies of views and that divergencies should be recorded. There were to be no minutes of meetings as such but effort would be made to preserve in the record the hard core of the discussion. Upon the acceptance of these suggestions, the discussion passed to consideration of the agenda.

The object of the discussions was established to be the full exchange of views among the planning teams, the clarification of such divergencies of views as should develop, and so far as possible the narrowing down of these divergencies. Such discussions should be of great mutual benefit. The paper "Notes on the Agenda" was reviewed and accepted as a basis for proceeding. It was decided that no firm timetable should be set, that at the conclusion of each meeting it would be decided when next to meet. The possible desirability of taking one or more breathing spells was recognized.

Discussion then turned to the problem of Standardization. It was agreed to set up a Standardization Committee, consisting of a steering member from each planning team, backed up by such persons from other services as each steering

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member felt necessary, to produce a paper for the planners which would clarify the basic objectives of Standardization, set forth the broad principles involved and, in so far as possible, recommend methods for the implementation of the concept. The question was raised as to whether the final step taken by the planners should be the presentation of a paper on the subject to the Combined Chiefs of Staff. The U.S. team did not feel that the Combined Chiefs of Staff were an appropriate agency to deal with the matter, nor did they want a paper signed three ways because of possible implications which might arise regarding the filing of such an agreement with the United Nations. It was tentatively decided that the planners' aim should be to present, so far as possible, papers of identical content to their separate Chiefs of Staff. As to how the various Chiefs of Staff would then act was recognized to be different for each nation involved, but it was hoped that the Standardization Committee could bring forth some specific recommendations in their paper, on which each nation would issue specific directives as a first step. The point was made by the Canadian team and agreed to by all that the planners' papers on Standardization should be tied into the strategic analysis of the future in order to show the essentiality of their proposals on standardization. The British planners felt that the respective Chiefs of Staff should agree as to objectives, principles and procedures.

The planners reviewed the U.S. memorandum on Standardization and, in the course of the review, recognized the difficulties that will arise in trying to coordinate research and development. The British planners wondered if difficulties regarding the exchange of information would be experienced. British policy, as recently reiterated to the U.S. Chiefs of Staff, is a completely free interchange of government-owned information between our respective Fighting Services. The U.S. policy is presently being reviewed. Final action on this review is expected soon.

It was agreed that paragraph 8 of the U.S. memorandum on Standardization should be used as terms of reference for the Standardization Committee, that the committee should meet formally for the first time on Thursday, 14 November, and should make its report to the planners, if possible, on Monday, 18 November, and

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not later than Tuesday, 19 November. The point was raised in regard to paragraph 8 c, that it would be most important to keep discussions on procedures on an inter-service basis even though the specific services might not contribute thoughts on every point.

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COPY NO. 14

RECORD OF SECOND MEETING  
1000 hours, 13 November 1946

The entire meeting was devoted to discussion of the British and U.S. papers on developments in the world political situation up to 1956. The British planners pointed out the basic similarity in thought in both papers, but agreed that their paper was somewhat more specifically military in its approach. They had tried to find to what extent Russian physical expansion could be permitted before British security interests were so seriously threatened as to require going to war. They intend to put up a paper along such lines to the British Chiefs of Staff, which may then be given their Government as the military analysis of areas essential to keep from Russia's hands if British security is not to be jeopardized. It was their feeling that the political sides of the British Government could best judge the nation's ability to carry out the military recommendations and, if the military requirements could not be met, could evaluate the implications of compromise. Such a clearcut exposition, including a detailed statement of the "stop line" as seen from the military viewpoint, was held to be necessary as background for the Foreign Office in order that Britain might act vis-a-vis Russia in such a way as to avoid a future "Munich."

The U.S. planners were in agreement as to the desirability, and even necessity, of the concept of a "stop line" and indicated that they also had worked out such a concept. However, they felt that the solution to the problem is more complex, even from the military standpoint, than can be found merely in the establishment of a "stop line." Political, economic and psychological factors are involved in any method of resisting Russian expansion and too much emphasis on the "stop line" alone might lead to an inflexibility in opposing Russia, which might be somewhat dangerous. Another factor affecting the "stop line" concept is the continuing question as to whether an attempt to implement the concept in the face of clever Russian action would always receive the essential public support. The U.S. approach to the problem is conditioned first by the conviction that the best way to win "the war with Russia" is to prevent its occurring, while, at the same time, yielding no advantage to the Russians. The "stop line" plays a most important part in such a plan but does not guarantee the holding of Communist ideological or political expansion.

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The Canadian team wondered to what extent the present pattern of Soviet dominated Communist states is likely to remain fixed over a period of ten to fifteen years. Is there not the possibility that national political and strategic requirements might, in the final analysis, tend to separate some of these states from direct Soviet control?

Discussion on the point raised by the Canadians brought out that the potentially paralyzing strength of Communism outside Russia lies primarily in the good organization always attendant upon it. This is most true in the dominated states within the iron curtain, but remains valid to a considerable extent in any nation wherein Communists have attained a measure of representation in the national government, as, for example, in France. It seems possible too that the Russians are deliberately fostering a facade of "national communism" as a front for Soviet or international communism. For example, the divergent party lines of the French Communists and the German Communists show that Moscow is not, at present, averse to variations from the Central Party line where this seems likely to improve the strength of the Communist parties within separate states. However, the effective organization of the true party members in each state and the discipline exercised over the mass of the ordinary party members permits Moscow to pull the strings when necessary. Therefore, it might seem somewhat optimistic to depend on the hope that national interests in "Communist states" will outweigh the loyalty of the party leaders to Soviet Communism in the event of war. Notwithstanding the strength of the Soviet Communist organization wherever it has infiltrated into other countries, there is still hope that, over a period of years, this hold will break down.

The thought was advanced that, while this hope is not unjustified, it is nevertheless a thin reed to cling to inasmuch as the western democratic systems fall far short of Communism in popular appeal, particularly to economically backward masses. However, we must not over-emphasize the so-called dynamic appeal of Communism. It is easy to confuse the supposedly intrinsic appeal of the Communist

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ideology with the very effective and dynamic way in which the Soviets carry out Communist policies of expansion and infiltration and enforce a continuance of Communism once established. The British team pointed out that, because of this strength of Communist coercive tactics, we must give full weight to the "stop line" concept. While it may be true that in the Russian dominated states a proportion of the people therein are valiantly fighting Communism, nevertheless we must be willing to meet power with power to show support of the gallant people who continue to oppose an enforced Communist rule. It is to be noted, however, that, while a firm support of the "stop line" will stiffen the resolve of those on our side of the line who are combatting Communism, it is not likely to be so effective on the other side of the iron curtain.

The thought was advanced that the best way to establish the will to resist Communism is by showing the people in the non-Soviet states that the Russians are, to all intents and purposes, using Communism as an instrument of Russian policy and that whether or not the Russians are fanatical believers in the ideological truth of Communism, they have made it patently clear that they, the Russians, are the chosen people to direct international Communism. There is a considerable Communist following in the U.S., but the American people are not too concerned on the ideological score. The danger lies in the Communist technique and ability to befuddle the average American on points of major policy. If the average American were convinced that ideological Communism was being used as the mere tool of Russian policy, he would be more energetic in his opposition.

Consideration was given to the possibilities of diminishing the internal hold of Communism in Russia and behind the iron curtain. The U.S. team felt that this field was worthy of considerable study, particularly since it represents one of the few ways of affecting by positive action the likelihood of a future war. Further discussion formulated the conviction that the strengthening and improving of economic and social conditions with non-Soviet states; the preservation in the western democracies of the will and ability to fight if necessary; and a positive attack on the popular support of Communism behind the iron curtain are the three fundamentals of the over-all opposition to Russian expansionism. In response to

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a question as to whether the U.S. would accept the promulgation of organized propaganda directed towards Russia, the U.S. planners said they felt that more mundane matters, such as appropriations of money for the purpose, etc., might make its full-fledged implementation rather difficult.

The British team raised the specter of a major economic depression in the next five years or so. If such should occur, particularly in the U.S., it could result in almost fatal results to any scheme to oppose the expansion of Soviet Communism. If it does not occur, we then have real hope for successfully achieving our objective of reducing and finally removing the Russian threat. Therefore, it is imperative that active measures be taken in every way possible to avoid the occurrence of a serious depression. The British planners felt that the British Social Democracy placed sufficient controls in the hands of the Central Government to enable effective measures to be taken to avoid depression. The results of the recent elections in the U.S., however, raised some questions in their minds as to the ability of the U.S. to avoid drastic fluctuations in her economy. As for Canada, the Canadian team felt that Canada had retained a sufficient measure of central control to obviate real danger from economic recession and that perhaps they had struck a happy medium between the U.S. and British systems. The U.S. team assured the other planners that the dangers of a depression were fully realized in this country, but pointed out that the recent elections represented a popular revolt against too much central control. However, the picture is not too fearsome in that the responsible members of the Republican party are well aware of the need to avert a depression and are traditionally the strongest opponents of Communism.

The British planners pointed out the realistic difficulties inherent in a situation where the western democracies will progressively wish to spend less and less money on their military forces at the very time when objective evaluation of the situation indicates that the willingness and readiness of the western democracies to fight at some point is the biggest deterrent to Russian expansion. This led to reiteration of the conclusion that effective opposition to Communist expansion requires the fullest popular understanding of the true Russian aims if it is to have the popular support required.

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The question was raised as to whether the effort to educate the man in the street should be directed at making him understand the strategic and security implications of the "stop line" concept or at making him aware of the real threat inherent in the over-all Russian policy. If the latter could be accomplished, the man in the street might be content to support his diplomats and strategists in their precise evaluations of the importance of specific geographical areas.

The British team felt that there are two tactical moves of transcending importance for the next decade. These are (a) to prevent a serious economic depression, and (b) to maintain good and stable conditions in western Europe. The U.S. team agreed but felt that (b) should be expanded, so far as is possible, to apply to the whole peripheral area around the iron curtain. The Canadian team also agreed but pointed out that one of the greatest strengths of western democratic ideology is its adherence to the right of self-determination. The recent elections in France appear to have made the Communist party the strongest single party in the country, and this under the system of free election. However, since Communism has been brought in by free election, it can presumably be ousted by the same means.

This type of infiltration need not worry us too much so long as the Communists do not move to complete their control by the introduction of totalitarian methods and the denial of the right of self-determination.

The U.S. team asked for a discussion of the point made in the British paper regarding the possibility of a revision in favor of the Russians of the Montreaux Convention. It was the U.S. view that any acceptance of increased Russian influence in the Straits would be fatal to Turkey's political independence. They felt that there is no valid military reasoning to support Russia's demand for more direct control over the Dardanelles. The Dardanelles could be closed by mines laid by aircraft operating from great distances, and Russia would always have the potential ability to seize or interdict the Straits with the greatest of ease. To assure egress from the Straits, there would be required a peripheral defense which would logically require projection into adjacent Asiatic Turkey, the Eastern Mediterranean islands and Greece. The British team agreed with these thoughts and said that it

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had been their intent in paragraph 34 of their paper to cover this concept. They brought out, however, the question as to whether the man in the street would understand the military thought expounded by the U.S. planners and felt that education along such lines could be profitable.

The U.S. planners asked for some discussion on the Far East. It is the U.S. planners' view that China-Manchuria is as important a bulwark against Russian expansion in East Asia as is Turkey in the Middle East. Unless China can be consolidated and stabilized to a reasonable degree as a non-Soviet, independent nation, Communism may expand down to Malaya. The British planners admitted to a certain worry that a situation might arise in China comparable to that which evolved in Spain during the Civil War; that is, that there might develop a war by proxy between Russia and the U.S., which could develop into direct war. The U.S. planners indicated that the U.S. is acutely aware of such a possibility and felt the U.S. was acting accordingly. This question, however, pointed up a possible difference in view as to the importance to the world of a stable, independent China. The U.S. is not primarily interested in China for economic reasons, except indirectly in that U.S. economic interests are best furthered by stability throughout the world, and China represents a potential stabilizing influence in the Far East. Perhaps the situation in China indicates a need for combined effort on the part of all non-Soviet powers so as to avoid the forming of a world-wide opinion that the U.S. is playing a unilateral and possibly dangerous game in China. China has a population half again as large as that of the U.S.S.R. and, if it could be stabilized and developed economically, could furnish trade markets sufficient to absorb much of the foreign trade of not only the U.S., but of the British Commonwealth and many other nations. The Canadian team pointed out that China's principal foreign trade before the last war was with Germany and Japan and that, so long as this trade is not greatly revived, there would be trade aplenty for other nations.

The U.S. planners asked for the British long-range estimate regarding the Scandinavian countries. British feeling is that there is more indigenous resistance to Communism in Scandinavia than almost anywhere else and further that Russia will

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respect the political integrity of the Scandinavian nations, since she is well aware that, in the event of war and should she wish it, she could rapidly take over these countries by military action. From the British standpoint, such an invasion could not be resisted. There is a growing tendency for these nations to become more and more linked economically with Russia. The Canadians pointed out that, prior to the last war, Scandinavian trade was bound up considerably with Germany and, therefore, the future situation in Scandinavia will be affected by the future of Germany. It was felt that a revival of trade with Germany, if encouraged, might weaken Russia's economic link. There was some question as to what position the Scandinavian countries would take should the world come to war, and it was generally agreed that, under the pressure of Russian strength, Scandinavian technical and industrial assistance might be made available to Russian war production. It was also felt that Sweden would not be constrained by her non-Communist political feeling from selling Russia precision-machine products which might be required for production of atomic bombs by Russia.

The planners felt that no effort need be made to reach an agreed paper on political developments to be expected in the next ten years. Both papers have contributed valuable thoughts and would be taken into account, together with the record of the discussions, in any studies which they might present to their respective Chiefs of Staff in the future.

At the close of the meeting, the British planners discussed the results of an interesting investigation they had carried out with regard to the Middle East. In this vital area they recognize that the Russian aim is to obtain control over the oil reserves. This oil, however, is also vital to the British Commonwealth. The British planners attacked the problem by first setting up the best arguments they could devise in support of the thesis that the Middle East problem could be solved by comprehensive demilitarization of the whole area. There has been much pressure from many sources to attempt to work out a modus vivendi in the Middle East by establishing it as a "no man's land," subject, perhaps, to some sort of

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United Nations inspection. The British planners then examined the demilitarization in great detail to determine whether withdrawal of their forces to bases, perhaps in Kenya and conceivably in Cyrenaica (in which they have no assurance that they can retain bases), would be sufficient to protect their vital interests in Middle East oil should the scheme break down and war occur. The analysis indicated clearly that the demilitarization concept would not hold water. British forces could not be withdrawn in peace without real jeopardy to the British position should war come. Logistic considerations alone proved the impossibility of carrying out the scheme without danger to British security and the idea has been abandoned.

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COPY NO. 15

RECORD OF THIRD MEETING  
1000 hours, 14 November 1946

The planners discussed new weapons and their effect on warfare about 1956. The U.S. and British memoranda on this subject and the British paper TWC(46)15 were referred to.

Atom Bomb Production

The British planners said that, as a result of a very recent reassessment of raw material available to the Russians, the figures in the British paper for estimated Soviet bomb production over the next ten years should be drastically scaled down to read:

by 1952	5 bombs
by 1957	40-60 bombs

A consequential amendment should be made to line 20 on page 3 by the deletion of of the date "1957." The fact that the Russians were known to be working on low grade uranium ores indicated that higher grade deposits had not yet been discovered in Soviet controlled territory. The reduced bomb production figures quoted above were based on the assumption that there would, at any rate, be no high grade discoveries in the next few years.

The U.S. planners said that, whereas the British estimates appeared to be based mainly on availability of raw material, the U.S. estimate had taken into account other factors, such as Soviet ability to master the technique of atom bomb construction and to construct the necessary plant. The U.S. estimates were somewhat higher than the revised British estimates but far below the original British figures. U.S. scientists were, however, inclined to credit the Soviet with the scientific ability to overcome all production difficulties without delay.

It was agreed that in the circumstances the U.S. estimate of 100 Soviet bombs by 1956 and the British estimate of 40-60 bombs by 1957 were sufficiently in accord for present purposes. Reliable intelligence of Soviet production would be most difficult to obtain but very much depended on the accuracy of the forecasts of Russian atom bomb production.

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Control of Atomic Energy

If in fact the production of Soviet atom bombs was likely to be greatly restricted by lack of high grade ores, then Russia would be likely to press for atomic weapons to be completely outlawed, and such pressure, exerted by the well known Soviet methods, might be politically very difficult to resist. In this event it was vitally important that effective measures of inspection should be introduced. The possibility was discussed that each nation might be required to give a commitment not to use atomic weapons unless the other side used them first. Such a commitment would place a country in an impossible military position against an unscrupulous foe, since the non-aggressor might be paralysed by atomic attack before any of its own atomic weapons could be got ready.

There followed considerable discussion on whether it was in our interest to agree to the outlawing of atomic weapons under measures of adequate inspection. It was pointed out that, in the absence of counterattack by atomic weapons, Russia with her mass of semi-mobilized manpower would have no real difficulty at any time in the period under review in sweeping westwards and overrunning the whole continent of Europe, except perhaps a part of Scandinavia. Unless extraordinarily effective air attack could be brought to bear on some "bottleneck" target, such as oil, there was little hope of halting the Soviet advance short of the oceans. The combined manpower of the United States and British Commonwealth, although comparable in quantity to that of the Soviet states, could not, for logistical reasons, be brought to bear on a European or Asiatic battlefield for a considerable period. In the meanwhile, the attrition of aerial bombardment and counterbombardment and the disruption of enemy propaganda and fifth column work might cause the war to end in a stalemate which would be tantamount to defeat for the democratic countries.

A study of Soviet targets now in hands of the U.S. planners placed oil as first priority, followed by steel industry, electric power, and then the transportation system. The effect of mass attack on South Russian urban areas was also under study.

It was the opinion of the Air Force representatives that in a future war of this nature, the continued operation of large strategic air forces deep into the territory of an opponent would probably result in an unbearably high wastage rate.

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Initially some relatively low-cost successes might be obtained until the opposition gained experience, but, unless there was some unexpected weapon development, the wastage rate would rise too high until such time as other factors, such as shortage of fuel or the acquisition of forward bases for fighter support, caused the opposition to weaken.

On the other hand, it was pointed out by the British planners that under somewhat similar conditions, the campaign for the reduction of the Japanese main islands had been planned by the United States in the face of fearful difficulties and, owing to the way in which these difficulties had been overcome, had been brought within measurable distance of success before the advent of the atomic bomb.

Nevertheless, it was generally agreed that there were good reasons for believing that during the period under review, the outlawing of atomic weapons might destroy the balance of military power upon which depended the continued uneasy peace of the world.

It was agreed that this question required further consideration.

#### Biological Warfare

The British planners were inclined to the view that, at any rate during the first part of the period under review, bacteriological weapons might play as important a part as atomic weapons. Admittedly they were untried on man, and, until so tried, their effect must remain conjectural, but after field trials on animals, scientists were definite in their opinion that bacteria were potentially a very powerful weapon of war over the next two or three decades. After that there was a distinct possibility that immunization would prove effective. The technique would be to disseminate the bacteria somewhat in the way lethal gases were released. Reliance would be placed on actual contact with the germs and not on the spread of an epidemic so caused.

The Canadian planners agreed that bacteria were probably a potent weapon for at least the next ten years.

The U.S. planners said they were not at present sufficiently informed regarding the potentialities of this weapon. They would try to find out more about it. They agreed, however, with the British view that atomic and bacteriological weapons fell into the same category as weapons of mass destruction, the outlawing of which would come up for serious consideration.

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The British planners expressed the opinion that even if "bugs and atoms" were not outlawed, a future war might run for some time with each side unwilling to initiate mass destruction. The Russians had seemed very impressed by the consequences of the devastation brought about by mass air bombardment on Germany and might hesitate to employ such methods on countries they intended to overrun. It seemed certain to the British planners, however, that neither side would initiate mass destruction methods unless a knock-out seemed thereby assured or unless otherwise defeat seemed inevitable.

There followed some discussion on the apparently optimistic statement in paragraph b (b) on page 6 of the U.S. memorandum regarding the number of bombs required to neutralize them.

The U.S. planners explained that from bases in the U.K., India, Alaska, etc., using shuttle missions and with aircraft with a radius of action of some 2,500 miles or more, it should be possible to deliver on the target some 150-200 atomic bombs, presuming 50 per cent effectiveness of delivery. This should neutralize most of the selected vital targets, and it seems fair to assume that the over-all number of bombs required will be available. It should be possible to overcome sufficiently the close antiaircraft protection by air to ground launching methods and with the range and altitude performance then available, a large part of the routes could be over water, particularly against oil targets. It was, of course, most important to reduce the distances to be flown.

At the request of the U.S. planners, the British planners explained how the figures in their report had been arrived at for the number of atom bombs required to neutralize vital targets in the U.K. The wide bracket (30-120) was necessary because so much depended on the opportunity given to organize civil defense, on the education and leadership of the people and on other imponderable factors. Bare figures were apt to be misleading.

#### Rockets

It was agreed that the very long-range rocket (3,000 miles or so), while perhaps scientifically practicable, was not an effective weapon of war in the foreseeable future. A few might be produced for their psychological effect.

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A long-range rocket (400-800 miles) was thought to be a probable harassing weapon in some ten years time, but it was very doubtful whether, on account of unreliability and inaccuracy, it would pay to put atomic warheads in rockets for 10-15 years to come.

Russia might well, however, decide to attempt the long-range rocket bombardment of the U.K. across the channel in preference to building up, without much experience, a large strategic bomber force. But there seemed no reason why she should not succeed in creating the smaller bomber force needed to deliver atom bombs on the target. There seemed no reason why bacteria should not be carried in rockets. Judging by the difficulties the Germans had with V-2, it might be some time before the Russians were able to develop a heavy scale of rocket attack across the channel.

The U.S. planners then gave provisional estimates for the performance and target dates for the following new weapons:

Ship to ground guided missile - by 1954, a 15 ton, 1500 mph missile, range 400-500 miles, payload 2000 lbs. Proposed accuracy one per cent of range. Payload may be increased to 10,000 lbs. by 1956.

"Bumble Bee" - 1500 mph, ram-jet, beam riding, AA missile to intercept aircraft of 600 mph speed, 30,000 ft. altitude, 20 miles range. Estimated accuracy two miles (one yard in 1000 yards). Available 1952. Range of 40 miles and homing by 1954.

"Meteor" - supersonic AA missile with radar homing. Liquid fuel propelled. Development proceeding so end result will be large, long range or small, short range missile if choice is made within two years. Estimated availability 1953.

Missile aircraft - two types being developed:

A modified pilotless fighter with 1500 mile range to be controlled by director aircraft for last 100 miles. Speed 1200 mph, warhead 3000 lbs.

A modified pilotless bomber with 5000 mile range to be controlled by director aircraft for last 100 miles. Speed 300 mph, warhead eight tons.

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The ceilings for the AA weapons were still comparatively low, but it was hoped to improve on them.

The British planners gave comparative figures for the AA manpower effort required to achieve 50% hits on bombers traveling 500 mph at 50,000 feet.

- a. Using 6 inch AA guns      4,000,000
- b. Using G.A.P.                      400,000

Although the mathematical basis for accuracy of aim might be questionable, these figures spoke for themselves.

#### Pilotless Aircraft

For the defense of the U.K. the supersonic pilotless fighter was an attractive possibility. The pilotless bomber might be available by 1956 for special missions but, as an expendable article, was likely to be too expensive for large-scale use.

The U.S. planners described an experimental parasite fighter (piloted), three or four to be carried in a B-26, with a speed of 500 mph and an endurance of thirty minutes, after which it would have to reattach itself to the parent aircraft.

#### Effect of New Weapons on Strategic Bombing

There was some discussion on whether, in face of all these new weapons, strategic bombing would remain a practical proposition. It was thought that Russia would be handicapped by her lack of technical personnel in the development and handling of complex weapons. The German scientists now working for her would be some help, but it was suggested that Russia might lag five years behind for some time to come.

The Canadian planners drew attention to the possible danger that Russia might make fifth column plans to liquidate the bulk of U.S. personnel possessed of the knowledge of operating atomic bombs.

#### Submarines

The U.S. planners said that in their paper, the submerged speed for submarines should read "25 knots" and not "35." Largely as a result of German development, the submarine of the future would have a very long underwater endurance, a submerged speed of 25 knots and be able to dive to 1,000 feet. It could recharge just below surface using the "Schnorchel" equipped with anti-radar.

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These submarines could travel faster submerged than the surface hunting craft when using their detector equipment. We were now in fact right back where we started in antisubmarine measures, and it looked very much as though the anti-submarine craft of the future was another submarine. "Sonar" equipment was far more effective on the same level in the water than acting from the surface.

The submarine of the future might only be vulnerable to attack in harbors and in narrow waters where the submarine mine should play a very important part.

#### Logistic Problems

In reply to a question, the U.S. planners said that they had given some thought to the effect of atomic weapons on logistic questions. A greater degree of dispersion would have to be accepted. Some study had been given to the possibility of using airborne supply methods in place of rail and road transport, but no conclusion had yet been reached.

Finally, the British planners queried the last sentence in paragraph (b) on page 1 of the U.S. paper about the probability of attack on industrial targets in the United States.

The U.S. planners thought that an intelligent enemy, reading the lessons of history, could not fail to realize the importance of the U.S. industrial capacity and would be bound to launch early attacks, perhaps only harassing in nature to start with. It was, moreover, open to doubt whether Russia would deliberately go to war unless she could hit U.S. industry hard at the outset.

It was pointed out that it was not always easy to read the lessons of history aright. Mistakes had been made in the recent war in the application of air power.

The Canadian planners drew attention to the vast resources that would be locked up defensively if only one bomb were dropped on Ottawa and on Washington.

It was agreed to give further consideration during the rest of the conversations to:

- a. The effect of atomic and biological weapons on future war.
- b. The future scope of strategic bombing.

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COPY NO. 11

RECORD OF FOURTH MEETING  
1400 hours, 14 November 1946

The entire meeting was devoted to a discussion of the factors affecting the outbreak of war and the period of time which would likely be available for preparation to the western democracies. The planners felt that the discussion was highly profitable and that it would be useful that the major points raised and the conclusions drawn be set forth in a paper. The paper entitled "An Estimate of Factors Affecting the Outbreak of War and the Time Available for Preparation" represents the views expressed and the conclusions reached by the planners.

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COPY NO. 11

RECORD OF FIFTH MEETING  
1000 hours, 15 November 1946

The entire meeting was devoted to discussion of the Russian war potential in 1956. The British and U.S. intelligence studies on this subject were considered in detail.

The U.S. team were reluctant to accept the U.S. G-2 thought that vast Russian forces could be mobilized practically over night, because of logistic limitations. The British team said their Intelligence felt that Russian regular forces will be so large that they should be sufficient to initiate war, with mobilization starting afterwards. The British planners were somewhat dubious as to this concept, at least so far as the calling up of home defense is concerned. It was agreed that the manpower available to Russia would be ample to fill her basic requirements, but the availability of sufficient technically trained personnel to operate complex new instruments of war was somewhat in doubt.

As to the help Russia could expect from satellites, it was felt the intelligence estimates were generally correct, but Yugoslavia could be expected to furnish effective forces to battle Italy. The allegiance of Polish forces to Russia could be questioned.

Arising from the discussions on manpower, it was agreed that little dependence could be put on Russian mobilization as a clearcut warning of impending war. The available intelligence sources are so imperfect that present estimates of Russian forces seem mostly arrived at by mathematical procedures rather than direct information.

There was general agreement that the relative efficiency of the Russian soldier is high. Well led, they are excellent and persevering fighters. Their mobile units in World War II were very good and it can be expected that a large part of their army in the future will be highly mobile. This will bring some compensatory vulnerability, however, because of increased effectiveness to be expected from strategic air attack on their supply. The strategic strength of the Russian forces on World War II came from a lavish use of unlimited manpower.

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Lavish use of manpower gave flexibility. If the Russians become wedded to machines and gadgets, they may lose this flexibility and be tackling the more technically advanced western powers in our own game.

It was the consensus that the Russians will have difficulty in the widespread use of highly technical new weapons and equipment. Even giving them the ability to stay fairly even with the western powers in general research and development, there will be a considerable lag between development and utilization on a mass scale. This lag may be partially overcome by intense specialization in the training of Russian personnel.

In discussing potential Russian air strength, the planners felt the U.S. estimates were overly optimistic regarding Russian capabilities and that the British estimates, while more conservative, were in certain regards also optimistic for the Russians. The British estimate gives the Russians 1200 medium long-range bombers by 1949, with production on a B-29 equivalent starting a year or so later. The U.S. team felt, as regards B-29's, that the Russians could do better.

The inadequacy of specific intelligence regarding Russian air power was deplored. It is most important to know, for instance, the degree of Russian success in producing jet-propelled fighters, and the utility to them of German scientists. British Intelligence estimates that by 1956 the Russian air forces should consist of 75,000 planes and 750,000 men. This indicates a ratio of ten men per plane as against our western experience of fifty men per plane. This discrepancy raises some question with regard to the validity of the intelligence estimate.

In view of the divergencies between the U.S. and the British estimates and the planners' doubts as to the validity of some figures in both estimates, it was agreed that it would be desirable for selected intelligence people of both sides to get together and come up with reconsidered estimates.

The U.S. team asked for the British views on Russian capabilities regarding airborne forces. British Intelligence estimates that in 1956 the Russians will have about 10,000 transport aircraft but that their maximum single drop might be

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about 50,000 troops, the drop being limited by the difficulty in mounting a larger operation. In the discussion on airborne capabilities which followed, the points were made that the ability to bring transports to a dropping zone against air and ground-to-air opposition must be taken into account, that with the increase in speed of transports the spread in a stick of parachutists will be considerably greater, resulting in loss of control. Against this it must be remembered that the Russians might use the principle of mass in an airborne attack to overcome increased difficulties of control. It was generally felt that the analysis of Russian capabilities for airborne action could profit by further study. The British have attempted to work up an estimate of the numbers of Russian planes likely to be tied up in home defense. They have arrived at a figure of approximately 2,000. The British team is not satisfied that sufficient study has been given the problem, and the planners were agreed that a more comprehensive analysis would be desirable.

The U.S. team felt that the U.S. intelligence estimate regarding the Russian navy was too optimistic from the Russian point of view. It implied priorities of construction which the Russians are neither likely to nor wish to assign to naval construction. It was felt that the Russians would build up their submarine fleet to a strength to somewhere between 300 to 500 and that these vessels would constitute a real threat. It was not felt that they would build many carriers nor heavier aircraft. The British team believes that the U.S. planners' comments were sound.

The problem of combatting the submarine menace must be given full consideration. It may be possible briefly to restrict the operations of submarines by controlling or mining the narrows from Russian waters, such as the Dardanelles and the Skagerrak. However, this is not likely to be profitable for long. Once Russian forces have overrun western Europe, numerous harbors already developed or capable of being developed as submarine bases will exist. Anything that can be found which will reduce the submarine threat by attacking its base system will be profitable, but it must be remembered that if our troops are forced to move long distances by water, public opinion will demand that they are given substantial

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antisubmarine escort. The British planners felt the one hopeful factor in the very dangerous submarine threat may lie in the probable technical ineptitude of the Russians to operate large submarine forces effectively.

The planners then turned to discussion of Russian capabilities for amphibious warfare. The British team felt that an invasion of the British Isles would be a major operation unlikely to be initially within Russian amphibious capabilities. It was generally agreed that the Russians would have the ability to make some minor amphibious attacks, for instance, across the Black Sea on the Turkish coast and similar operations in Scandinavian waters, but would not have the ability to invade areas requiring a long sea voyage, such as Iceland or the Japanese islands.

The British team felt that, in order to seize the British Isles, the Russians would have, first, to win the air battle over the islands, next, use airborne forces in considerable quantity to seize ports, and then follow up with normal shipping to reinforce port areas. Rather than to attempt to seize British Isles, however, the Russians might be content to sit on the Continent and hammer away with long-range missiles to produce chaos throughout the islands.

Biological warfare was discussed at the third meeting, and the planners had agreed that further study as to the capabilities in this field were necessary. The British team commented on a U.S. intelligence report which indicated that the Russians will not lag behind any other nation in their ability to immunize the Russian people against biological warfare agents. Apparently there exists already an efficient organization in Russia for immunization against numerous diseases of the type most attractive in biological warfare.

Considerable discussion was devoted to the likely strength of subversive and fifth column activities by the Russians in the event of war. All agreed that such activities could be a very effective weapon and felt that the discussion in the U.S. intelligence estimate was good except for the opinion expressed that fifth column activities would be immediately nullified after the actual outbreak of war. It was felt there would be considerable difficulty in



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stamping out the last vestiges of underground activity. The possibilities of achieving some sort of control over Communist activities during peacetime was considered. It was felt that principal dependence would have to be put on counterespionage, screening of people in responsible positions, and an effective scheme for taking all suspected subversive personnel into custody upon the realization that war was imminent. A great deal will depend on how the situation is handled immediately before the outbreak of war. Perhaps the greatest efficacy of the fifth column movement will be in its ability to confuse the issues and mislead the public in this tense period. This aspect of fifth column action may be more valuable than sabotage. An ability to force the governments of the western states not to take adequate precautions in a period of tension could be disastrous.

The British team felt that the over-all problem of combatting Communist infiltration by fifth columns or more direct political means was complicated by our necessity to carry out two seemingly contradictory policies, (a) to avoid war, and (b) at the same time maintain the necessary strong posture. The U.S. team pointed out that the U.S. is still, in the minds of most of its people, isolated. A good two thirds of the areas of possible conflict with Russia are areas more or less accepted by the average American to be predominately British interest, as, for instance, the Dardanelles and the Middle East. The policy of the U.S. will be conditioned by that of the British Commonwealth. U.S. policy will perforce affect the firmness with which British policy opposes Russian expansion, but in turn specific U.S. policy may become less firm upon public announcement of lessening British interests in any particular area. The British planners agreed and pointed out that British policy will depend largely on the support it gets from Washington. It is not strictly correct to use "British" or "U.S." policy per se. The policies involved in areas of more or less direct opposition to Russian policy must be mutually acceptable to both countries, a marriage of commonly acceptable intentions.

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It was felt that the interrelations of British and U.S. policies in these hot spots of the world could be expanded further in the effort to enlist the support of the Dominions and, so far as possible, the respect of the non-Soviet world. Our policy, in other words, must be generally supportable by public opinion in the non-Soviet world. One mistake in the day to day political battle with Russia could set our cause back severely and cast doubts on numerous other policies or actions which might be intrinsically good.

The discussion then turned to Soviet industry and economic potential. It was felt that neither the U.S. nor the British intelligence estimates gave an adequate presentation of this phase of Russian potential. The industrial strength of Russia would certainly, to some extent, suffer from lack of skilled technicians. One point seemingly in favor of Russian economic strength lay in the ability to decentralize industry to a far greater extent than the Western Powers will be able to carry on. This, however, may be a mixed blessing in that dispersion will require more intricate communications which can therefore be more vulnerable to air attack and will certainly vastly increase the Russian problem of air defense.

The planners felt that they had little specifically useful information on Russia's situation regarding strategic materials. It was generally presumed that the Russians will be self-sufficient for most items by 1956. Further and continuing study on this subject will be necessary. It was felt, in this connection, that a special study on the Russian oil situation, with particular reference to the possibility of new fields being developed within continental Russia, would be worthwhile.

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COPY NO. 15

RECORD OF SIXTH MEETING  
1430 Hours, 15 November 1946

This meeting was devoted to presentation by each of the various service planners of the peacetime organization and plans of his particular service.

U.S. NAVY

The U.S. Navy contemplates maintaining in the Atlantic and the Pacific mobile forces in readiness to cope with emergency situations as well as to form the basis for expansion to meet foreseeable requirements in the event of war. This visualizes maintaining two fleets each composed of a carrier striking force (built around approximately six fast carriers), an amphibious force and a submarine force, together with mobile service and mine forces and a nucleus strength of fleet aviation squadrons specialized in antisubmarine warfare and fleet reconnaissance. The personnel strength required to provide these forces in the interim period following World War II is approximately 437,000 men. This number will vary as conditions stabilize. The Navy will maintain a ready fleet Marine force of approximately 20% of the strength of the Navy and divided between the Atlantic and the Pacific in order to provide a nucleus of trained and ready amphibious troops to meet emergency conditions. It is planned that the Marine force will be made up of not to exceed 2 Divisions and 1 Brigade.

Backing up the active fleet of the U.S. Navy will be a reserve fleet in inactive status.

The U.S. team felt that the Latin American navies will be of little real help in a war about 1956 except possibly on antisubmarine activity.

ROYAL NAVY (Excluding Dominions)

The Admiralty has tried to estimate the manpower requirements for an Empire Fleet in a world war. Such a fleet would make up two heavy task forces, one available for distant service, the other for Home fleet duties.

Pertinent data are:

	<u>Manpower</u>
Fleet required in a World War	613,000
Fleet required for defensive war	563,000
Probable peacetime strength	208,500

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Planned use of peacetime manpower

<u>Principal Units</u>	<u>Full Commission</u>	<u>Reduced Complement</u>	<u>Reserve</u>
CM	4	-	4
CVL	8	2	2
CME	-	-	2
BB	3	2	5
CA & CL	19	2	12
DD	48	39	19
DE	40	25	132
SS	29	16	35
Aircraft	500 1st Line	-	300 In Reserve Squadrons

Expansion

Conscription - a new factor - will give good reserves except in more highly skilled categories.

Ships in full commission and on reduced complement can probably be brought up to full strength within 2 months of emergency.

Commissioning of Reserve Fleet ships could probably be done in about 7 months if the ships are kept refitted and up to date. This last is a big proviso and it may well be a year or more from the start of a warning period before the bulk of such ships are in a fit state to be commissioned.

Naval Air Expansion

Eighteen months warning period is required to expand training and to gear industry to war. After this warning period, carriers in reserve can be brought forward at about 1 CV and 6 CVL, or similar combination, every 3 months. Spare air groups are not anticipated for the early stages of a war.

ROYAL CANADIAN NAVY

Plans for the Interim peacetime Navy were based on an arbitrary manpower ceiling of:

RCN - 10,000  
Reserve - 18,000

Within this limit, the following ships and facilities are being retained:

Ships In Commission:  
1 Light Fleet Carrier  
1 Cruiser  
8 Destroyers

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In Commission with reduced training complement:

- 1 Cruiser
- 1 Destroyer
- 2 Frigates
- 2 Minesweepers
- 1 A/S Yacht

In Reserve:

- 1 Light Fleet Carrier
- 4 Destroyers (including 2 Escort Destroyers)
- 12 A/S Minesweepers
- 16 Frigates

Aircraft

- 2 Fighter Squadrons
- 2 Torpedo Bomber Reconnaissance Squadrons
- 1 Fleet Requirements Unit

Reserves

Reserve Divisions at 18 cities  
4 Squadrons are being formed at four major  
Reserve Divisions.

Bases

Esquimalt  
Halifax

With the exception of a light fleet carrier and two destroyers which are building, all the ships are already available.

In the event of mobilization, it is anticipated that the 18,000 personnel authorized for the Reserve would only be sufficient to bring up to war complement ships in commission, man ships and air squadrons in reserve and place bases and training establishments on a war footing.

U.S. ARMY

The U.S. does not have as yet what can be called an integrated mobilization plan. Work is in progress to develop a strategic complex taking into account probable developments in warfare. From this will be worked out the basis for a balanced mobilization plan.

Pertinent data are:

Regular Army (11 Divs)	-	670,000 men
National Guard (25 Divs)	-	Approx 600,000 men
National Reserve Guard		
(9 Divs and many technical support units)	-	Approx 700,000 men

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Mobilization

M / 1 year	50 Divs
M / 2 years	80 Divs

(This mobilization plan is subject to many complex factors, the question of whether or not the U.S. will adopt peacetime universal military training, being one.)

Reserves in Equipment

For present, plan is to hold reserve stocks for 4,500,000-man Army, but some deficiencies, such as heavy trucks, etc., already exist.

BRITISH ARMY (and Dominions, excluding Canada)

The forces listed below are the maximum under present plans. Forces actually available some years hence are likely to be less.

Peacetime Forces

Active Army: British

Nucleus of antiaircraft command  
6 Divisions, including 1 Airborne  
Proportions of Corps and Army troops.  
Some 30 Battalions for garrisons overseas  
Manpower - 330,000 men, 10,000 women

Territorial Army: British

Territorial components of AA Command  
9 Divisions, including 1 Airborne  
Manpower - 650,000 men

Dominion Forces

1 South African armored Brigade  
1 Australian Inf. Div.  
New Zealand regular forces (500 men)

India

5 Divisions, including 1 Airborne

Colonies

17 battalions

Burma

1 Division

Expansion

U.K. -- Maximum strength 30 Divisions, including peacetime members of Divisions

Balance of Commonwealth and Empire -- 17 Divisions in addition to peacetime forces

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CANADIAN ARMY

Active Force

Planned Strength - 25,000 all ranks, including 1 Brigade Group

NOTES: (1) Present strength is approximately 14,000. Interim Force (available to Sep 47) being employed to fill gaps in organization. Joint Recruiting Campaign for Armed Services starts shortly.

(2) Bde gp is to be equipped and trained for air transport.

Reserve Force

Planned Strength - 180,000 all ranks.

Includes - Six inf divs.  
Four Arm'd Bdes.  
Coast and A.A. defense units.  
Corps tps.

Probably reorganization shortly to -

Four inf divs.  
Two Arm'd divs.  
Two independent arm'd bdes  
Coast and A.A. defense units  
Corps tps.

Mobilization Plan

Provision of A.A. and local ground defense units NOT yet worked out in detail. Dependent on planning with USA for defense of North America.

One corps of two inf divs, one arm'd div, one independent arm'd bde to be available for dispatch to overseas theater during first twelve months.

Detailed manpower studies NOT yet completed but consider defense requirements can be met and still permit dispatch overseas of a second similar corps after first twelve months.

Mob. Reserve for one corps only now arranged, except for AFV's of which no operational types available and M.T. where 25% only is held due to releases for civil needs.

Consider above plan can be met during next five years, but will become progressively more difficult to achieve thereafter unless a period of compulsory service in peace is authorized.

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U.S. AIR FORCE

Present plans are for the following:

70 Groups -- 400,000 men comprised of:

- 21 VHB Groups
- 22 Fighter Groups
- 5 Light Bombardment Groups
- 4 Reconnaissance Groups
- 3 Night Fighter Groups
- 10 Troop Carrier Groups
- 2 VLR Reconnaissance Groups
- 1 Photo-mapping Group
- 2 Weather Groups

Present thought for mobilization is to expand to 180 Groups at the end of two years. However, training requirements and availability of aircraft make the achievement of these figures questionable.

ROYAL AIR FORCE

160 squadrons, 350,000 men, about 3,000 aircraft of which

20 squadrons will be reserve, i.e., Auxilliary Air Force.

Day Fighters, 54 squadrons	970 aircraft
Night Fighters, 12 "	216 "
Long-Range Bombers, 32 "	640 "
Maritime Reconnaissance, 12 "	168 "
Maritime Striking, 6 "	120 "
Transport, 2 engine, 14 "	350 "
Transport, 4 engine, 9 "	225 "
Miscellaneous 7 "	132 "

No appreciable expansion will be foreseeable for about 18 months after which expansion at the rate of 40 to 50 squadrons every six months to an ultimate limit of 500 squadrons may be possible. The Dominions may provide initially 14 squadrons, about 200 aircraft.

CANADIAN AIR FORCE

Peace Strength (Interim):

Regular	-	16,100
Auxiliary	-	4,500
Reserve	-	10,000

Operational Units:

Regular - 7 Squadrons, composed as follows:

- 2 BR Recce
- 2 Transport
- 1 Fighter
- 1 Fighter Recce
- 1 Photo

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Auxiliary - 15 Squadrons, composed as follows:

7 Fighter  
6 Fighter Bomber  
2 Light Bomber

Reserve:

Peacetime structure not yet determined.

Mobilization Plan:

Not yet determined. Based on last war, the maximum strength on voluntary recruiting basis would approximate 250,000. The number of Squadrons would depend on the magnitude of effort directed towards Commonwealth Air Training Plan.

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COPY NO. 15

RECORD OF SEVENTH MEETING  
1400 hours, 18 November 1946

Stemming from the basic subject, "Strategic Materials," the meeting developed a discussion of all the assets which might become available to the Western Democracies in a future war.

The British planners explained that measures to minimize the effect of enemy attack on the industry of the country were under study by the Home Defense Committee, which had a civilian chairman, and of which the Vice Chiefs of Staff of the three services were members. These military members of the committee had been asked to give guidance as to the probable time factors, areas of attack, weight of attack and particularly vulnerable areas: a very difficult task, the answer to which could not really be more than an educated guess. The committee would then consider recommendations on storage, stockpiling, dispersion, and shelter.

The U.S. planners explained the organization of the Army-Navy Munitions Board. It was pointed out that through the Army-Navy Munitions Board the Services were capable of direct contact with industry and that the effectiveness of the Army-Navy Munitions Board during World War II was due to the War Powers Act and the tie-in between the Army-Navy Munitions Board and the War Production Board and the Priority system.

The Canadian planners stated that their country was still very much concerned with demobilization and had not yet begun active mobilization planning.

In the course of a discussion on the likely effect of enemy attack on British production in the U.K., the British planners said that, pending the results of the Home Defense Committee review, which were unlikely to be available to another six months, it was their opinion that the best that could be hoped for war that dislocation might not exceed that achieved by the Germans in 1940-41. At worst, production in the U.K. ought to be sufficient to keep the country going, taking into account reserves accumulated before the war and during periods between intense attack. British forces and territories outside the U.K. would have to rely very largely, if not entirely, on Commonwealth and U.S. production.

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The U.S. planners stated that the problem of civilian defense had been put up to the President with the recommendation that a means to meet the problem be established.

The Canadian planners brought up the significant point that the end products of their industry more often than not required component parts from U.S. and other countries and that to be really effective, their industry should receive guidance as a result of standardization and coordinated production as to what to build.

The British stated that they were not as much concerned with the availability of strategic raw materials at their sources as they were with the means of getting these materials to the U.K. This led to a discussion of shipping.

The U.S. had at the end of the war about 50,000,000 tons of shipping, of which about 11,000,000 tons would remain operational, the rest would be laid up and small quantities may be sold. It was difficult to forecast how much of this shipping would be available in ten years because of the variable factors: foreign trade, difficulties with maritime unions, and the significance of sailing under foreign registries. Storage by the government would be difficult because of the lack of funds. The bottleneck in the early stages of a war ten years hence was more likely to be in the manning and handling capacity of the U.S. rather than in the number of bottoms available.

The British said that the capacity for building and preservation of shipping were very important. The British merchant marine ought to be in a fairly healthy state after four or five years, during which period the shipyards would be busy, but there was an unwelcome tendency, from the military point of view, to build special purpose ships. Especial attention was being paid to the retention of landing craft since the atomic bomb might well render U.K. ports useless in time of war.

The meeting noted the growing tendency toward specialization in commercial shipping and agreed that it might make conversion to military use more difficult. They agreed that there was a continuing requirement for heavy-lift ships and that the shortage of tankers might be critical.

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The Canadians stated that their current shipbuilding program would not last beyond 1949, and that there was not more than a slight hope of keeping their shipyards going by means of a subsidy.

The discussion then turned to oil. It was suggested that there was probably enough crude oil in the world available for the first two years of a future war, taking into account the consumption of the jet engine, but provided that it were properly allocated, that adequate distilling capacity were available, that enough tankers were available and that sufficient storage capacity was provided both of end products and crude.

The U.S. oil study indicated that there was enough oil under U.S. control, outside the Middle East, to last the U.S. through two years of war. In the third year, 93% of requirements would be available, and in the fourth year, 86%.

It was agreed that the oil problem required further study with special emphasis on the type of fuel required for jet engines.

The U.S. planners inquired about the industrial development of the Dominions, other than Canada. The British planners stated that certain of them had developed war industries during the recent conflict and intended to attempt a continued expansion. Their production was likely, however, to remain comparatively very small.

The Canadians reiterated their statement that to be effective Canadian industry must be told what to build.

There followed a general discussion of the various nations of the world and their probable initial reaction to a future war.

India. The British planners thought that India would act objectively, i.e. in the way likely to further her own special interests. It should be borne in mind that the financial backing for the Congress party came very largely from Indian capitalists. Of the three possible courses of action, India would be more likely to remain neutral, or come in with us under certain conditions, than to do a deal with the enemy. We might expect her to allow us the use of bases and manpower, again under certain conditions or promises of assistance, but it would be

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wrong to count on this. Our best way of achieving this would be to keep India within the Commonwealth orbit if possible.

It was explained by the U.S. planners that considerable importance was attached to the availability of bomber air bases in the Karachi area and for an advanced base near Lahore to enable certain targets to be reached. Karachi was preferred to Lahore for the main base on account of its easy access to sea transport and of the fact that a considerable "stand-back" was necessary for loaded heavy bombers to attain an altitude of 20,000 feet. It was agreed that the uncertainty of India's attitude enhanced the importance of areas in the Middle East being available as bases for long-range heavy bombers. It would be premature to try to negotiate now for the use of bases in India in wartime.

South Africa. Her attitude was difficult to foretell. Last time General Smuts had been largely responsible for her early entry. Any threat to the African continent would be likely to bring her in sooner or later.

Turkey could be counted as a useful ally unless she had become prematurely "sabotaged."

The Arab States would be influenced by whatever decision was ultimately taken over Palestine. Provided such a decision was not too adverse, they would probably be all right. Their oil association with the U.S. might prove useful.

Egypt had no affinity with Communism and might not in fact refuse to cooperate on the early arrival of Anglo-American forces, provided they arrived early and could furnish some air protection for the big cities.

Spain and Portugal were likely to remain neutral, at least until the rest of Western Europe had been overrun. A cleavage was likely to develop in Spain with the possible result of Communist control in the Northern half and the development of a threat to Gibraltar with repercussions on the security of the Mediterranean sea route.

Italy. Unpredictable, with Roman Catholicism likely to prove the deciding influence.

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French North Africa. It was to be hoped that the bitter lessons of World War II would result in North Africa becoming a rallying point for French resistance.

France. It was agreed, after some discussion, that if we really tried to assist in the rehabilitation of France by economic and other means, we might well be successful, provided that the country retained the right to choose its own form of government. The recent Communist success at the polls was not necessarily symptomatic of the increasing spread of Communism in the country. It would, however, be rash to count, at any time in the foreseeable future, on a strong anti-Communist France.

China was likely to retain her political integrity and should serve as a military cushion if a world war broke out.

Japan was still likely to be under occupation ten years hence, but she would be subject to the danger of a spread of Communism resulting from the return of indoctrinated prisoners of war from Russia. A most important factor was the degree of economic stability that could be achieved. For a long war, her industrial potentiality was important and its development might become an early charge on U.S. industry.

The planners agreed that economic and political solidarity of each country, combined with a thriving world trade, would go far toward assuring that the smaller countries would join with the western democracies in any future conflict.

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COPY NO. 11

RECORD OF EIGHTH MEETING  
1000 hours, 19 November 1946

Continuing the earlier discussion of fuel for jet engines, the U.S. planners stated that they were informed by technical advisers that there is no compelling reason why any type of fuel should not be used. The U.S. Navy has contemplated the use of higher octane fuel to avoid carrying two types aboard ships. It is understood that the British plan the use of kerosene type fuel. It was agreed that a compromise should be possible on common types of fuel. The U.S. team stated that a paper was in preparation giving more facts on this subject and would be presented later.

The planners then turned to consideration of the subject of standardization on which a paper had been prepared by a subcommittee. It was agreed that the paper was a good one and clarified the problem. During the discussion two questions were raised, however, as to its completeness. It was agreed that perhaps the paper did not go far enough in indicating machinery for implementation. It was also agreed that the paper should have a cover sheet containing pertinent facts and considerations bearing on the problem.

On the first point, the U.K. planners expressed the belief that the paper should indicate how representatives of each country should get together. They envisaged a flexible machinery, with exchange of ideas and information perhaps varying with stages of the work on any particular project. For example, information might be exchanged on the idea stage, on the requirements stage, or at the time prototypes of any developments were available. The question was raised as to whether or not representatives of each country should be established in all three capitals or in only one, or perhaps a combination of both ideas, with the initiative or impetus normally being allotted to one of the three places, perhaps initially Washington.

The U.S. planners pointed out that there was really no such thing as complete exchange of information and ideas, even within the respective services; that we should understand that if we secure exchange on major items, it may be the best we can hope for. It is perhaps too much to expect that we can hope to get all the minor items. For one thing, neither country has the manpower to devote to the job.

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Differences in organization were discussed and agreement reached that the next echelon to which the problem is passed would have to work out many details. It was also agreed, however, that the guidance to the next groups should, if possible, be improved.

As to the second point, the U.S. planners presented a paper setting forth facts and considerations, including mention of the unlikelihood that either Great Britain, Canada or the U.S. will become involved in a major war without participation by the other two, the fact that Soviet operations early in the conflict would deny access to raw materials in Europe and the Middle East, the probability that the output of U.K. industry would be needed for home consumption alone, that Canada was "in the middle," having responsibilities both to the Commonwealth and the Western Hemisphere, and that the major portion of supplies in a future conflict would probably come from industry of the Western Hemisphere.

It was agreed that the paper was acceptable as a cover sheet; however, after further discussion, the thought was advanced that paragraphs should be added indicating political considerations. The U.S. planners expressed the view that internal political factors fluctuate in a democracy and embarrassing queries might be raised of the military in connection with any program of standardization. It was also stated that external policies may also fluctuate and the possibility exists that trade agreements made by one country may possibly cause one or more of the participants in a standardization program to qualify its participation at least temporarily, due to security considerations.

The British and Canadian planners agreed with the general nature of the thoughts expressed, and agreed further that some mention of political considerations might well go into the cover sheet.

The U.S. team then raised a question regarding paragraph 4 b (3) on page 5 of the paper prepared by the subcommittee, which indicated the essentiality of standardization starting with the adoption of basic mechanical and electronic components, etc. The planners agreed that the use of the word "essential" was perhaps too strong.



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The planners agreed that it would be advisable, if possible, to downgrade the standardization paper to "secret" and perhaps to "confidential" in order to allow greater distribution among the working people.

After further discussion, the planners returned the paper prepared by the subcommittee, along with the draft cover sheet prepared by the U.S. planners, to the subcommittee with instructions to work out, if possible, additional and clarifying instructions as to the implementing machinery, paragraphs for the cover sheet containing political considerations, and a rewording of the paragraph on the basic paper dealing with the essentiality of standardization starting from basic mechanical and electronic components, etc. It was stated that the paper from the subcommittee was desired by Thursday, 21 November, if possible. The committee was instructed to present, in the event it could not reach an agreement, discussion setting forth the factors produced by the respective planners.

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COPY NO. 15

RECORD OF NINTH MEETING  
1415 hours, 19 November 1946

The meeting was opened with a discussion of the caution which must be exercised in basing firm plans on existing programs for the development of new weapons. In many cases these programs are stated in terms which are far from predictable realities. This statement applies particularly to the field of guided missiles, where it would be ill-advised to make actual plans based on the availability of new weapons in accordance with the schedule of improvement which has been set for research and development. The planners must judge what we may have available, and when, avoiding both over-optimism and over-conservatism.

The meeting then proceeded to a detailed discussion of the paper "An Estimate of Factors Affecting the Outbreak of War and the Time Available for Preparation," during which it was revised in several respects. It was agreed that when this paper is in final form, it will be handled separately by the three delegations. It was suggested that each delegation would put it up separately at an appropriate time to its Chiefs of Staff. It was also suggested that the several Chiefs of Staff might pass the paper on to their respective governments as an expression of coordinated military views regarding the possibility of another war; the shape such a war might take; and the measures which might be taken to prevent such a war, or, alternatively, to achieve the best position beforehand for winning a war, if it proves unavoidable.

The meeting then passed on to discussion of possible Soviet strategy and lines of action leading toward war, and during a war.

The point was made that the U.S.S.R. might well see a major advantage in avoiding any sharp break from peace to war. From the Soviet point of view there would be definite advantages in avoiding clarification of the international situation, choosing rather to increase their activities aimed at deteriorating the strength of nations opposed to them. In this way, with patience, they might achieve a substantial portion of any objectives they might have in a war without having to fight it. As a minimum goal, it is not

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impossible that they could force nations opposed to them to take open action first, thereby appearing to be the aggressor, and further confusing the ideologies involved. Such a program might be achieved by forcing the democracies to intervene in many places around the world outside the Soviet sphere through the creation of unrest so prejudicial to our interests as to be impossible to overlook.

It does not appear logical to expect a sudden move on the part of the U.S.S.R. comparable to the Japanese attack on Pearl Harbor. In the period preceding a war which had already been decided upon, it would appear logical for the Soviets to strive to divide the U.S. from Great Britain, and to avoid antagonizing non-Soviet world opinion, particularly in any areas they might plan to overrun with military forces.

It would appear to be a logical part of Soviet strategy to attempt to reach a position which would be difficult for the U.S., or for the U.S. and Great Britain together, to challenge. If such a position could be reached without actually having to fight Great Britain or the U.S., so much the better from the Soviet point of view. With a dynamic force at work within the Soviet sphere, a condition of stalemate should work to Soviet advantage; with the passage of time the U.S.S.R. might be able to attain a comparatively unassailable position for the event of war.

The creation of such a stalemate in Western Europe would not necessarily require taking all of Western Europe under Soviet domination, particularly if the means employed were those short of world war. However, a strategic stalemate would certainly have been reached if the U.S.S.R. gained control of Western Europe to Gibraltar and the Middle East to the Suez Canal.

An important factor bearing on Soviet capabilities to attain such an objective is whether France goes effectively communist. If she does, it may be difficult even to draw the issue clear as to whether the western democracies are actually at war with the U.S.S.R. This would be particularly true, at least as regards Western Europe, if neither Belgium nor Holland were to put up any active resistance.

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As for the same considerations in the Middle East, it cannot now be said with certainty whether ten years from now Iran, Iraq, or Greece can be counted on to put up enough resistance to make it clear that war has begun. On the other hand, Turkey could probably not in the foreseeable future submit to Soviet domination without war.

It was generally agreed that the U.S.S.R., after attaining a condition of stalemate, would be in an advantageous position to offer terms to any alliance which might meanwhile have banded together against her in war. Although she would probably not in the next ten years have attained the means of immediately threatening the U.S., the possession of the Channel coast would enable her to bring to bear a most serious threat on the U.K., even though she had no weapons more advanced than those developed by Germany in the last war.

It was generally agreed that within the next ten years it would be to the interests of the U.S.S.R. in preparing for war, or in the early stages of war, not to consolidate the effort against her by directly attacking the U.S., unless it had become apparent that the U.S. was prepared to intervene quickly and effectively in the war. In this latter case, action to impede U.S. efforts would be in order.

There was some discussion of how to state the various sets of conditions under which the U.S.S.R. might open an offensive, and probable Soviet lines of action under each set of conditions. This subject was passed over to the next meeting.

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COPY NO. 15

RECORD OF TENTH MEETING  
1000 hours, 20 November 1946

The meeting began with a brief recapitulation of the closing discussion of the ninth meeting. For convenience in discussing possible Soviet strategy, it was agreed to consider lines of action open to the U.S.S.R. under three cases.

a. In addition to consolidating control of the areas already occupied by Soviet forces, the U.S.S.R. might attempt to continue expanding her perimeter by means short of those which would certainly bring on world war. Under such a program she might have to reckon with the possibility of minor hostilities getting out of hand and bringing in Great Britain or the U.S. However, over a period of ten years it cannot be said positively now that minor action in such places as Iran and Greece, preceded by thorough communist penetration, would necessarily bring on a large scale war.

b. The U.S.S.R. might attempt a blitzkrieg to extend her perimeter in Western Europe, and in the Middle and Far East, if the tactics of case a were not proving out satisfactorily. Such a campaign would initially be limited, probably not including provisions for amphibious assault on either the British Isles or the Japanese main islands. However, its goal should include reaching the English Channel so as to bring a potent threat to bear on the U.K.; the Suez Canal to cut the direct British line to the Indian Ocean; and far enough south in the Far East to remove any important overland threat on Siberia through China. Korea would be taken.

c. The U.S.S.R. might at some future date attempt a sudden strike around the world. North America would be included.

It was generally agreed that case c is an improbable event for the next ten years; that the maximum direct threat on North America would be harassment to avoid quick reinforcement of other fronts from North America, particularly the U.S. This conclusion turns on an estimate of Soviet capabilities in the development of effective long-range weapons, in which field it should be noted that British studies discount the Soviet program by about five years as against

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U.S. studies. This conclusion also turns on an estimate of Soviet judgment as to the effect of such a blow on the U.S.; whether it would solidify and concentrate the U.S. effort as was the case after Pearl Harbor, or whether in combination with other communist action such a blow could in fact bring a high state of confusion into the U.S. effort.

It was generally agreed that a most important Soviet decision regarding a possible war would be whether to harass or appease the U.S. during the period of any initial campaigns in Europe and Asia. The same sort of decision at a shorter range will arise with respect to the U.K. Under certain conditions, such as in pursuing the line of action under case a, the U.S.S.R. might try not to provoke Great Britain. If Great Britain enters the war, even if Russia possessed atomic weapons she might try to avoid their use and subdue the U.K. with conventional explosives.

If the U.S.S.R. could achieve a stalemate, she would count on attrition working to her advantage. She would use all available political, social and economic weapons against the countries opposing her. She could create diversions, including in some cases military diversions, in Alaska, China and other parts of Asia, and in those parts of the Middle East and Europe remaining outside the Soviet lines.

It was agreed that India would be a Soviet objective, to be neutralized if possible by political means or, if necessary, perhaps by military action. In this connection it is important not only to estimate our own strategic air capabilities but also to assess the Soviet estimate of those same capabilities.

It is possible that the Soviets, not having had experience with distant overseas operations and strategic air offensives, may over-estimate our capabilities. Such pessimism on their part may well be a factor in preventing war, but it may also be a factor in setting early Soviet war objectives farther out than we would consider logically necessary. They may be led to the conclusion that it is vital actually to occupy the U.K. early, in which case, for instance, heavy airborne assault might be expected. They might also be led

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to the conclusion that it is vital to deny us bases in India and Egypt. It is doubted that their ambitions would extend to seizing Japan, although a lesser project for seizing Hokkaido might be included in their plans. The over-all result of such conservatism, from the Soviet point of view, might be to limit the number of their broad offensives initially. In such case, first priority for omission should be in the Far East where continence would offer an additional advantage in that China would not be involved.

There was some discussion of U.S. strategic air capabilities with B-29 and B-36 aircraft, dealing principally with the question of whether bases for such aircraft in areas not under U.S. political control should be planned. It was pointed out that distances to the center of the U.S.S.R. oil complex were the same from Maine as from the Philippines (4500 miles) and the same from Alaska as from Okinawa (4000 miles). These distances are within the theoretical range of the B-36, certainly if minor bases can be had closer for landing after delivery of the bombload. Building primary U.S. bases in Maine and Alaska is, of course, of great advantage from the U.S. point of view, since they can be built there under complete control and with minimum chance of any provocation to the U.S.S.R.

Bases in India and Egypt would enable B-29's to perform the same tasks described above for B-36's.

There was a brief discussion of the U.S. air plan in the event of Soviet war. This plan includes:

a. Some attacks on the U.S.S.R., taking off within forty-eight hours. The aircraft might be expended, although there would be a good chance for B-36's to land after the mission in some other place, such as Egypt. The intent of these early attacks would be to blunt the first edge of the Soviet blitz.

b. Several groups of aircraft would be staged to the U.K. and put in operation in about four months' time. This operation would expand the objective described under a.

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c. By the end of four months it should be clear what bases should be developed in other parts of the world, and the air plan for the war could be outlined with some accuracy, and necessary operations, including construction, could be undertaken.

It is the opinion of the RAF that there is now one field in the Sudan and three in India which can handle B-29's. Nine more could be made ready in India within six months. Three more in Egypt, three in Cyrenaica, and ten in India could be added within a year. These construction estimates are very conservative, and intensive effort could probably bring these fields in earlier.

There was some discussion of Soviet operational capabilities as of 1956.

Within a reasonable bracket, British and U.S. intelligence estimates are in agreement that very little time will be available to concentrate effective resistance to Soviet drives in Western Europe and the Middle East. The British estimate that Western Europe (less Spain and Scandinavia) and the Middle East (less Turkey) can be overrun in six weeks. Turkey would require an additional six weeks. The U.S. estimates that within 120 days the Soviet advance would be extensive in both areas, including perhaps the Suez Canal and Gibraltar.

It was pointed out that these estimates practically discount any effective resistance, that they are based largely on movements and other logistic factors. A very little airpower in the Middle East, particularly brought to bear in the Caucasus and Taurus mountains, could make a great difference. The political situation will also exercise an important influence.

It was the view of the U.S. Navy planner that by using carriers we could furnish substantial tactical air support for Turkey within the time allowed. Such support might well enable us in the end to hold Palestine, which it was agreed is a vital point.

There was some discussion as to whether oil might be a bottleneck in Soviet operations, but considering the time which would be devoted to Soviet stockpiling, it was agreed that the bottleneck, if any, should not deter a Soviet advance during the first few weeks or months.

It was agreed that the next meeting would consider allied strategy and lines of action open to us.

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RECORD OF ELEVENTH MEETING  
1415 hours, 20 November 1946

The question arose as to what territory would have to be seized by the U.S.S.R. to present us with a position of effective stalemate. The following was generally agreed:

- a. Western Europe, at least to the Pyrenees, and including Italy.
- b. The Middle East to the Suez Canal.
- c. In the Far East, Korea and Manchuria.

In Western Europe the stalemate would be most unfavorably balanced against us if the Soviets were successful in denying Gibraltar to us. On this point there was not complete agreement as to the naval considerations. It was agreed that Gibraltar was essential to keeping the Mediterranean open, but the U.S. Navy planner is more optimistic than the other planners as to the extent we could expect to use the Mediterranean if we lost Gibraltar. The British view is that, except for very minor operations, support of the Middle East must be planned to go around Africa if Gibraltar is lost.

There was considerable discussion of British ideas and tentative plans for action during the initial stages of a war. Three tasks were considered to be of overriding importance:

- a. Hold the really vital areas.
- b. Keep communications to those areas secure.
- c. Retain the capability of offensive action.

It is the British view that the following places are essential to hold:

a. Japan. This should not be too difficult unless the U.S. has completely withdrawn from the Western Pacific, or unless the occupation of Japan has gone most unfavorably.

b. India. Considerable assistance must be furnished from the U.K., particularly technical assistance, if we are to be assured of satisfactory bases there in 1956. Given a reasonable political agreement in India, the air defense should be relatively easy, and no land threat is foreseen for the early stages of war during the next ten years, when Soviet commitments would

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be so heavy in Western Europe and the Middle East.

c. The Middle East. We will probably lose the oil fields as far back as the southern shores of the Persian Gulf, but we must make every effort to hold a line as far forward as possible, preferably around Syria and Palestine. If U.S. ground and air support is available quickly, this may be possible.

d. Spain, if possible. If impossible, it may have to be retaken later to open the Mediterranean so that the Middle East may be fully utilized as a base area.

e. The United Kingdom and North America, of course.

The defense of the U.K. presents many intangibles. It cannot be said now just how much insurance the nation can afford in the way of dispersal of industry and population, and in placing key installations underground. A definite ceiling is imposed on any such program by the necessity for not dangerously reducing the general standard of living.

On the military side it appears that the gravest threat is rocket attack and conventional air bombardment. Large scale amphibious operations against the U.K. do not appear to be a likely threat during the next ten years, but airborne seizure of a port or ports is a possibility. The bottleneck in such airborne operations would be in the mounting. The British plan perhaps nine army divisions for defense in the U.K., estimating that some five U.S.S.R. divisions might be airborne. The British also plan the use of some 42 brigade groups of Territorials for defense of the home front, the principal mission being envisaged as the normal tasks under air attack, such as keeping communications open and maintaining order. There will, of course, be a maximum effort of the Home Guard type. These plans are all tentative.

The British estimate that the U.S.S.R. should have some three to five thousand aircraft to employ against the U.K., capable of mounting an attack comparable to that of the Germans in 1940. In addition, this attack can be expected to be built up in due course (5 to 6 weeks) by a rocket attack comparable to that of 1944. Present RAF programs do not include more than

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about half of the 600 day fighters and 300 night fighters estimated to be necessary to meet such a Soviet air attack. RAF programs do include, however, 5 to 600 heavy bombers to operate from the U.K. and diminish the scale of a Soviet attack. By 1951 or 1952 these should be very heavy bombers.

In this connection, it should be noted that of the 15% of the population of the U.S.S.R. living in cities of 100,000 and over, some 69% (or 49 cities) are within 1,850 miles of the U.K. This consideration may well affect the balance of strategic bombing as between industrial and urban targets in favor of urban targets in the early stages of the war, particularly if atomic bombs are available.

The U.S. Navy planner places some credibility in a report that within fifteen years all key Russian industry will be underground. There was considerable discussion on this point, and the ability of the U.S.S.R. to support such a program in addition to her other economic commitments was questioned.

The over-all British air estimate is that, while at times it will be difficult, minimum necessary air defense of the U.K. can be accomplished. With quick assistance from the U.S., the job should be relatively easy.

The discussion passed to British naval planning. Considering the improved types of submarines which will be available to the U.S.S.R., the antisubmarine problem will be a very difficult one. Present estimates are that some 240 escort vessels will be required, and present types will not be adequate to the purpose. At a minimum, substantial modification will be required. The estimated requirement for carrier borne air escort is considerably beyond any foreseeable British resources.

Very high priority is being given now to improving equipment for hunting new type submarines.

There will be required, as in the case of the last war, a quick occupation of Iceland. There will also be required the most strenuous effort to keep the Mediterranean open, but this project may have to take priority behind the holding of the Middle East itself. Crete, for instance, may have to be abandoned in order to hold Palestine. It is vital at all costs to deny the Indian Ocean to the U.S.S.R.

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The discussion passed to British capabilities in Africa as they affect the defense of the Middle East. The British planners hold it essential to effective action in the Middle East in time of war that some solution be found to the difficulties of maintaining troops there in peacetime. They estimate that the garrison in Palestine should not fall below two divisions; that logistic support prevents stationing more than four divisions there.

British negotiations with Egypt impose a large question mark on the entire subject of British capabilities in the Middle East. Cyrenacia, the Sudan and Kenya together are at best a very poor stop-gap substitute for Egypt, but there must be some place for stocking supplies and equipment in peace. There must be at a minimum be an agreement for immediate reoccupancy of Egypt in case of war. Palestine is too far forward as a main storage area, and port and transportation facilities must even so be largely increased not only there but in the other places remaining available for peacetime use.

The importance of the Mediterranean route to the Middle East is indicated by the fact that three times the shipping is required to carry the same cargo around Africa. From the naval point of view, however, this task must take priority below maintaining control of U.K. waters and the North Atlantic route, and keeping Soviet forces out of the Indian Ocean. Although there was some divergence of opinion as to our ability to hold the Mediterranean open from the beginning, there was no disagreement that it must at some time be reopened if the Middle East is to serve as an effective strategic airbase.

There was some discussion of ways and means for reopening the Mediterranean in the event the Soviets closed it. If Spain is to be held, or alternatively to be retaken, which is a requirement in the event it is lost, the best solution is to gain and hold the line of the Pyrenees. Holding any line south thereof would be much more expensive, possibly beyond our resources when other commitments have been met, particularly in the Middle East.

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There was some discussion of alternates to reopening the Mediterranean route. The routes are not attractive, but they include:

- a. Western Europe, through Germany. This appears to be out of the question.
- b. Northeast from Spain. This looks very difficult.
- c. In the event the Middle East, beyond the Suez, has to be retaken, an advance up the Arabian Peninsula might be possible. If such an advance would make secure the strategic air bases necessary to strike the U.S.S.R., it could be well worth the attempt.
- d. Through the Far East. Such an operation would be mounted from Japan or from China. In either event, political considerations permitting, it would pass through China. The distances involved are so vast as to make it worth while at least considering whether there could be devised a system of hopping from one key point to another, along the lines of Pacific Ocean strategy during the last war. However, a tremendous air capability would be necessary, and, at the end of the route where maximum Soviet resistance could be expected, the lines of communication would be almost impossibly long.

It was agreed that initial operations open to the allies were concerned mainly with holding the necessary key areas and lines of communication, so that an effective offensive could be launched in due course. It was therefore agreed that a logical approach to the initial problem might be found by skipping to the end of a war, settling upon the most attractive lines of action for victory, and then coming back to the discussion of this meeting to try to find the way from first essentials to ultimate objectives.

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RECORD OF TWELFTH MEETING  
1000 hours, 21 November 1946

The initial portion of the meeting was given to discussion of the draft paper on Standardization as presented by the Committee on Standardization. Members of the Committee were present and took notes to be incorporated in the final draft. The principal points raised were as follows.

The U.S. team felt the question of the machinery for the exchange of information needed clarification. The fact must be faced that it will not be possible to have, over a long period, a formal, interlocking, combined control agency. Parallel agencies operating by mutual cooperation should be satisfactory. Even such agencies might take some time to set up. It would be best to eliminate the word agency, which might have undesirable connotations in the U.S. setup. It was generally agreed that each nation might set up interservice Steering Committees operating on parallel lines and charged with general coordination by consultation and cooperation.

The question of security classification was raised. The British team felt that any indication that over-all standardization was taking place should be "top secret" but that many specific considerations might be unrestricted. The other teams felt "top secret" to be too high for the over-all matter. It was agreed, however, that the planners' papers on standardization would consist of a top-secret cover sheet peculiar, in part, to each nation, with Annex "A" being top secret and Annex "B" being secret.

The British planners expressed the hope that all would agree to give their Chiefs of Staff the same general recommendations: (1) to notify the other Joint Chiefs when they had approved the paper, and (2) issue implementing orders only when all the Chiefs of Staff had approved the paper, so as not to start unilateral implementation. This general concept was agreeable but it was pointed out that peculiarities in the governmental organization of some nations might complicate the matter.

The British team proposed a "final court of appeal" in the event the Steering Committees could not agree on some specific matters. It was felt, however, by the U.S. team that it was not desirable to attempt to set up for such a contingency in the planners paper.

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The British team said they would like to show the final paper to the heads of the three British Service Missions in Washington. This was agreed.

The meeting then turned to further discussion of the strategy of a war against the U.S.S.R. The U.S. team felt consideration should be given as to how such a war might be successfully terminated, and then the strategy worked back from there. The war might end on the basis of a negotiated peace or by the political disintegration of the U.S.S.R. How could either of these be brought about?

After considerable discussion it was the consensus that blockade in its traditional sense would not seriously affect Russia and that the end of the war would be brought about by some or probably all of the following means: (a) bombardment, (b) occupation of certain limited key areas, (c) destruction of Soviet armed forces, and (d) psychological and political means.

Occupation can only be of certain key areas and even then would be impossible for at least two years after the outbreak of war. Therefore, our efforts in these two years will be primarily concerned with air bombardment, the strategically defensive operations necessary to carry on and prepare for future offensives, the necessary support for the air bombardment, and preparation for future offensives.

The question of what would be the most effective method of target choice for the air bombardment was discussed at length and many ideas exchanged, including whether Russia alone should be the target, whether oil targets were of most profitable priority, whether bombardment for morale destruction was likely to succeed, etc.

It was generally agreed that greatest attention should be given Russia herself with the bombing of Soviet occupied areas held back so far as possible and done only when essential targets existed in the occupied areas. Morale destruction must receive considerable effort. If mass destruction weapons are used, the effect of air bombardment on morale will be much greater. The object of the air bombardment is to upset or destroy the Russian war potential and to break the will of the people to keep fighting.

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The Canadian team pointed out the necessity for keeping clearly in mind the actions which must be taken to win the war as against those taken in the interim. The latter alone can prevent defeat but not bring victory. They also suggested the great importance to solution of the postwar problems if our strategy can be devised so Western Europe liberates itself rather than being liberated by the direct action of outside troops.

The point was made that perhaps much of the difficulty in trying to see through to the end of the problem of gaining victory over the Soviets lies in the paradox which confronts the planners. On the one hand the vast "heartland" of Russia is so impregnable to traditional ground invasion that an operation on the Napoleonic or Hitlerian scheme has little or no likelihood of success. On the other hand, holding operations without some decisive offensive action can lead at least to stalemate. The question resolves itself into can air bombardment alone furnish the decisive offensive, and, if not, what are the methods of offensive action to be employed? Certainly psychological, political and morale breaking campaigns must also be employed. If these all do not suffice, and it is difficult for planners to assume they will, then limited ground offensive action must try for the coup de grace.

After further discussion, the planners agreed to continue their strategic analysis at the next meeting.

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RECORD OF THIRTEENTH MEETING  
1430 hours, 21 November 1946

Continuing the discussion of allied strategy, the U.S. planners pointed out that the war would probably have to be ended by political rather than military means.

To hasten its conclusion, the allies would have to maintain:

- a. A demonstration of determination to continue the fight, and
- b. The capability to overcome the offensive capacity of the Soviets and to counter with increasing military force.

Whereas in the case of Japan we had the capability of bringing out a purely military solution to the war, it does not appear that we would have this capability in the case of the Soviets. We should by all means in our power bring the Soviet political leaders to propose a negotiated solution. If they don't, then we should be in a position to drive them to political disintegration.

The British planners queried as to how we could "tidy up" the end if political disintegration left us no one with whom to negotiate.

It was agreed that the Soviet leaders would certainly negotiate prior to disintegration. The precedent of World War I was discussed when the allies merely sat on the periphery of Russia during a change in its form of government.

There followed a discussion of what in fact would constitute a military conclusion of the war. The British planners felt that we should lead the Soviet political leaders to believe we could bring the war to a military conclusion if necessary.

This might be done by destruction or control of the key areas and control of the lines of communication between them. Suggested key areas were the Caucasus region, the Kharkov area, the Urals, or, alternatively, the Moscow, Omsk, Stalingrad triangle. It was suggested that a despression of living standards, the defeat of the armed forces, and great casualties among the civil population might be considered as a military conclusion.

The U.S. planners stated the opinion that unless all of Western Europe could be mobilized on the allied side, there would not be the manpower to

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penetrate Russia. The distances are too great and there would be no flanks. The idea of seizing the industrial heart of Russia poses force requirements, the furnishing of which might destroy the non-Soviet world.

The British planners re-asserted their belief that a military conclusion could be brought about if the allies could deny or control the main industrial areas and the communications between them.

The question of timing was discussed. It was agreed that the earlier the folly of aggression could be ingrained in the minds of the Soviet leaders, the better it would be for the world. Three or four years spent doing this might put an unacceptable drain on the world's resources. If plenty of force could be used by the allies early, a negotiated end to the war might come in less than two years.

The U.S. planners stated that the effectiveness of the allies would be a function of several factors:

- a. Means available to do the job, such as aircraft, high explosives, and biological warfare agents.
- b. Bases from which to operate.
- c. Capability to support military operations.
- d. Ability of the enemy to oppose our operations.
- e. Vulnerability of the enemy forces on the ground.

From these there follow the tangent conclusions that:

- a. Initially the carriers for bombs, biological warfare, personnel, etc., will be limited.
- b. Opposition is likely to be better as time goes on.
- c. Hitting hard and fast is to our advantage.

The U.S. planners then told of a US AAF plan for the early initiation of a strategic air offensive based on capabilities as of 1 October 1946. This plan indicated that Soviet oil resources within presently Soviet-held territories could be reduced approximately 75% from bases in U.K. and the Middle East within nine or ten months after M-day, using conventional bombs and aerial mining. This would involve air lifting approximately 50,000 tons of bombs and mines with 5,600 sorties. Estimated losses would be 160 aircraft.

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It was agreed that this study points at least to the need for and advantages of early offensive action. The enemy defenses would improve rapidly and might eventually produce unacceptable losses.

It was agreed that a study should be made to determining the efficacy of using atomic bombs against oil targets.

The British planners then stated that in order to combat those elements of their government who say that U.K. and the Middle East cannot both be held against Soviet attack, they would like to be able to tell their Chiefs of Staff that military aid would be forthcoming from America in the early part of any future emergency.

It was agreed that there should be further studies to determine:

1. What is required to defend the U.K.
2. What is required to defend the Middle East.
3. What will be the requirements for U.S. basic undertakings.
4. What will<sup>be</sup>/the capabilities for a strategic air offensive in 1956.

In the case of the last study, it was pointed out that it is very difficult to prognosticate our strategic air capability in 1956.

The U.S. planners felt that agreement on basic undertakings is important that that the study on the defense of the U.K. and its relation to the defense of the Middle East should include data on the availability of U.K. and Dominion air forces and their disposition.

It was pointed out that, if the Middle East were lost, perhaps the U.K. had better not get in a war.

Any study on the defense of the U.K. should include also a search for the means for defense within the U.K. and the Dominions. Personnel shortages might be met by an active reserve program, airframe shortages might be partially alleviated by active support to the aircraft industry.

The British planners suggested a cost study of the forces required to meet Soviet aggression, together with the means of finding them. This study to be revised from time to time.

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It was agreed that planning guidance to logistics people could not be acceptable or effective over periods longer than two or three years. On the U.S. side guidance has consisted merely of saying our forces will be deployed to Eurasia to the limit of our capability.

It was agreed that the State Department and the Foreign Office should be impressed with the importance of the time factor in any future war in order that the military might have the maximum time for preparation.

It was agreed that the British and Canadian teams would each produce an outline of a paper concerning some of the points brought up in these meetings, considering the following points among them:

- a. Basic undertakings require readily available resources.
- b. Ultimate solution of any future war will probably be a political one.
- c. Power or the appearance of power on the part of the Western Democracies lowers the possibility of war.
- d. How do we approach the problem?
- e. There is a need for basic strategic guidance for long-range planning.
- f. There must be thought not only on how to keep from losing the war, but also how to win it.
- g. What about the atom bomb and biological warfare?

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RECORD OF FOURTEENTH MEETING  
1500 hours, 22 November 1946

The final "Standardization" paper was distributed. The U.S. team indicated that for security reasons the paper may not be published as a formal U.S. Joint Chiefs of Staff paper but may be handled more anonymously.

The British and Canadian teams then distributed their papers, "Notes for Strategic Guidance in Planning." It was considered that the two papers had very much the same basis. It was decided to discuss each in detail, using the British paper as the working basis for the production of a revised paper. The results of the discussion are incorporated in the new draft being distributed at the Fifteenth Meeting.

At the end of the meeting it was generally agreed that studies, both specific and general, on matters essential to this sort of planning must be continuing projects. Further productions along such lines will be exchanged informally. Initially these will be exchanged through Brigadier Price to reach the British and U.S. planners and through the Secretary, Canadian Chiefs of Staff Committee for the Canadians. It will be desirable to set up appointments as the agents for exchange in the future.

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RECORD OF FIFTEENTH MEETING  
1400 hours, 25 November 1946

The British planners stated that they had got agreement of the three heads of the British Staff Mission in Washington to the Standardization paper.

With regard to the security classification of the Standardization paper, it was agreed that Appendix "A" would be top secret and would be given only limited distribution. Appendix "B" would be classified secret, with the proviso that paragraph 1 and appropriate other paragraphs which might appear to cover broad policy matters, would be limited in their distribution. (No such other paragraph was mentioned at the meeting.) The classification of implementing directives should be indicated by their contents. Such directives should be held to a confidential classification or lower, except where their contents indicate that a higher classification must be used.

In the interest of clarity, it was agreed that all papers except final drafts would be destroyed. In the interest of security, all unnecessary copies and notes would be destroyed.

There was some discussion as to how the papers would be handled by the three delegations. The British and Canadian delegations leaned tentatively toward handling these papers as matters for their respective Chiefs of Staff jointly. The U.S. delegation leaned toward handling the papers separately within the U.S. Army, Navy and Air Forces. It was agreed that each delegation would decide on its own method.

There was a brief discussion of possible publicity on standardization agreements. An article in the New York Herald Tribune, 25 November, indicated that the press had word of U.S. and British common intent to standardize, but it appeared from this article that the press was considering only such items as small arms.

The British team put forward the idea of suggesting at least to the British Chiefs of Staff that adverse publicity be forestalled by an announcement in the U.K. that the British intended to effect a measure of standardization with the Canadians. Thus the matter of standardizing with the U.S. could be handled in light of the common knowledge that Canadian industry is quite closely integrated into the U.S. industrial complex.

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TRIPARTITE DISCUSSIONS ON STANDARDIZATION  
AND STRATEGIC PROBLEMS - WASHINGTON, November, 1946.

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*Staff (DND) Review*

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