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SOVIET BLOC CAPABILITIES THROUGH 1957



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CENTRAL INTELLIGENCE AGENCY

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SOVIET BLOC CAPABILITIES THROUGH 1957

THE PROBLEM

To analyze the principal factors affecting Soviet Bloc capabilities and to estimate the probable development of those capabilities, through 1957.

ASSUMPTION

That there will not be general war within the period of this estimate.

CONCLUSIONS

1. Developments within the USSR resulting from the change in leadership may ultimately affect Soviet Bloc capabilities, but so far the economic and military bases of Soviet power are believed not to have been affected by Stalin's death. This estimate, therefore, is based on the trends within the Soviet Bloc since 1945, and does not attempt to estimate whether, or to what extent, these trends may be affected by changes within the ruling group.¹

¹ The Special Assistant, Intelligence, Department of State, the Assistant Chief of Staff, G-2, Intelligence, Department of the Army, and the Deputy Director for Intelligence, The Joint Staff, believe that this sentence should be replaced with the following:

It is impossible as yet to estimate with confidence whether or not a prolonged struggle for power among the new leaders will develop during the period 1953-1957. We believe, however, that if such a struggle for power should develop, it would be confined to the higher echelons of the Soviet Communist Party and Government and would probably not precipitate open conflict within or between the armed forces and security police, or involve the Soviet population. We estimate, therefore, that the stability of the regime in the USSR is unlikely to be jeopardized by differences that may develop among the Soviet leaders.

2. The rate of growth of the Soviet economy will almost certainly remain higher than that of the US or any other major Western state. However, the output of the USSR will remain much lower than that of the US, and the output of the entire Bloc will remain much lower than that of the NATO states.

3. Bloc scientific and technical capabilities will continue to increase throughout the period of this estimate. However, the scientific assets (the number and quality of trained personnel, facilities, equipment, and financial support) of the US will remain greater than those of the USSR, and the assets of the West as a whole will remain far greater than those of the Bloc.

4. By mid-1957, the USSR may have a stockpile of from 335 to 1,000 atomic weapons (30-100 kiloton yield).² We have no evidence that *thermonuclear* weapons are being developed by the

² The estimates beyond mid-1955 are tentative projections of the estimates for the earlier years.

USSR. Soviet research, development, and even field testing of thermonuclear reactions based on the disclosures of Fuchs may take place by mid-1953. However, it is very unlikely that the USSR could test a full scale thermonuclear device based on these disclosures before mid-1954. There is also a possibility that Soviet field tests based on independent research and development along other and advanced approaches to the thermonuclear weapons problem might occur by mid-1954. Testing of advanced models might be possible earlier if US developments were known through espionage or other compromise.

5. The USSR now has the capability seriously to disrupt Western long-range radio communications and navigation systems.³ Soviet capabilities in related electronic fields indicate that the USSR is now capable of developing equipment for jamming frequencies up through SHF, and the USSR could produce such equipment by 1957. If such equipment were produced on a large scale and placed in operational use, it would probably constitute a threat to Western short-range radio communications, navigation, and, to a lesser extent, bombing systems, unless Western anti-jamming capabilities were improved.

6. We estimate that the size of Bloc forces-in-being will not increase substantially by 1957. The emphasis in the program for increasing Bloc military strength will continue to be placed upon modernizing the armed forces and upon enlarging the atomic stockpile.

³ For more detailed information, see SE-38, "Soviet Bloc Capabilities and Probable Courses of Action in Electromagnetic Warfare" (24 April 1953).

7. We estimate that the Bloc now has the capability to undertake⁴ concurrent large-scale operations in continental Europe, the Middle East, and mainland Asia. The Bloc could reinforce with Chinese Communist and Soviet forces the Communist forces now in Korea, and at the same time undertake⁴ an invasion of Japan by Soviet forces.

8. The USSR now has the capability to undertake⁴ concurrent air operations against the US, the UK, continental Europe, the Middle East, Japan, and the offshore island chain of Asia. However, operations against the US would be much more difficult than those against the other areas. The USSR has the capability to reach all parts of the US and to attempt the delivery of its full stockpile of atomic weapons. However, even a stripped-down TU-4 could reach only the extreme northwestern corner on two-way missions without aerial refueling. Even with aerial refueling and other range extension techniques,⁵ attack upon the strategic northeastern industrial area and upon most of the principal strategic bases almost certainly would involve the expenditure of the attacking aircraft and most of the crews on one-way missions. Until it has a heavy bomber available for operational use, the USSR will not have the capability to reach most of the strategically important areas in the US on two-way missions. A heavy bomber based upon a type which has been seen in flight

⁴ No estimate of the success of these operations can be made without considering the effects of the actions of opposing forces.

⁵ We believe that the USSR has the capability to utilize range extension techniques, but we have no evidence that any of these techniques have been exploited.

may be in production and may be available for operational use within the period of this estimate.⁶

9. We estimate that the Bloc has the capability of providing vigorous opposition against air attacks on critical targets in the interior of the USSR, under conditions of good visibility. Under clear moonlit night conditions, Bloc defense capabilities are fair against piston bombers and negligible against jet bombers. Under conditions of poor visibility, day or night, Bloc interception capabilities are negligible.

10. Currently known trends point to an increase of Bloc air defense capabilities during the period of this estimate. However, it is impossible to estimate the extent of significance of any increase, because the future development of airborne intercept (AI) equipment and of guided missiles is obscure; in any case, such an estimate would require knowledge of the characteristics of attacking aircraft through the period of this estimate.⁷

11. Bloc naval forces (except for ocean-going submarines, and new cruisers and

destroyers) as now constituted are designed to protect Bloc coastal areas and seaward flanks of ground campaigns. We believe that, as new construction with improved characteristics becomes operational, emphasis will be laid on the creation of striking forces which could operate within the limits of the range of land-based air support. Bloc minelaying capability is extensive, and in the event of war, could seriously interfere with Allied sea communications in Europe and the Far East, or with Western naval operations in waters adjacent to the USSR. The Soviet submarine force will increase its capability to undertake offensive patrols and mining operations along most of the world's strategically vital sea lanes, and possibly, if the specialized craft have been developed, simultaneously to launch guided missile attacks against targets on both the Atlantic and Pacific seaboard of the US.⁸ The Soviet Navy will have no long-range amphibious capabilities within the period of this estimate, but it will remain capable of mounting short-range amphibious operations in considerable force.

12. The principal sources of strength upon which Bloc political warfare capabilities are based will remain Bloc military power, which generates fear and defeatism, and the Bloc's size, strategic position, economic power and potential, and centralized direction. Other sources of Bloc political warfare strength are the highly organized Communist international movement, and the leadership and discipline of the individual Communist

⁶For more detailed information, see SE-36, "Soviet Capabilities for Attacks on the US through Mid-1955" (5 March 1953).

⁷The Director of Naval Intelligence believes that this paragraph should read as follows:

We believe the Bloc will continue its present emphasis on air defense, and that its capabilities in this respect will increase during the period of this estimate. Operational use of improved early warning and ground intercept radar, and the extensive employment of airborne intercept equipment will contribute to this increase. The development and production of all-weather jet fighters and guided missiles, which are within Bloc capabilities, would further improve Bloc air defense. However, we cannot estimate the significance of these improvements relative to future air offensive capabilities.

⁸We believe the USSR capable of adapting submarines to this use, but we have no evidence to indicate that such modifications have been made.

Parties; Communist ideas and doctrine, which influence many non-Communists as well as Communists; and the accumulated experience and professional skill of Soviet intelligence, propaganda, and subversive organizations and of Soviet use of front organizations. Finally, the fixity of Communist purpose to impose Communism on the world and the unified direction of Communist action give the Communists a tactical political warfare advantage in determining the nature, direction, and intensity of courses of action to be used against the non-Communist world.

13. It is difficult to estimate how Bloc political warfare capabilities will develop, since they depend to a large degree not only upon the situation within the USSR but also upon the success with which the non-Communist world meets the challenges to its stability which would exist even if there were no Communist threat. It is also difficult to estimate the development of Bloc political warfare capabilities because they are dependent not only on the relative attractive power of Communist and non-Communist ideas, but on the relative military strength of the Bloc and the West. If Western military strength should increase, relative to that of the Bloc, Bloc political warfare capabilities would probably decline. On the other hand, fear of war and consequent vulnerability to Bloc political warfare would probably increase in the non-Communist world, if the Bloc's capability to deliver atomic weapons should increase relative to Western defenses, and if the Bloc should improve its air defenses relative to Western offensive capabilities.⁹

14. We believe that during the period of this estimate Communist capabilities to establish Communist governments by political warfare techniques will be most likely to increase in Southeast Asia and the Middle East. These capabilities will probably remain greatest in Iran and Indochina.

15. In other areas of the world, Communist capabilities to influence the attitudes of non-Communist governments and peoples will constitute the principal danger posed by Bloc political warfare. The Communists may be able to undermine support for Western programs of defense and for increased political and economic unity, and they may be able to heighten tensions among the members of the Western coalition. For these purposes, they can exploit national differences between the Western Powers, economic and trade difficulties, nationalism in colonial and dependent areas, and dread of war.

⁹ The Director of Naval Intelligence believes this paragraph should read as follows in order to render the military hypothesis more realistic and inclusive:

It is difficult to estimate how Bloc political warfare capabilities will develop, since they depend to a large degree upon the situation within the USSR, the success with which the non-Communist world meets the challenges to its stability which would exist even if there were no Communist threat, and the relative military strengths of the Bloc and the West. Thus, Bloc political warfare capabilities will increase if the non-Communist world fails to solve adequately the problems of economic stability, national rivalries, common defense, and aspirations for independence in the colonial areas. If Western military strength and cohesion should increase substantially relative to that of the Bloc, Bloc political warfare capabilities would probably be checked, and might decline in some areas. On the other hand, if the over-all military strength of the Bloc should substantially increase relative to that of the West, Bloc political warfare capabilities would rise, particularly with respect to the promotion of appeasement, apathy, and the fear of war.

DISCUSSION

NON-MILITARY FACTORS AFFECTING
BLOC CAPABILITIES

Internal Political Factors

USSR

16. Developments within the USSR resulting from the change in leadership may ultimately affect Soviet Bloc capabilities, but so far the economic and military bases of Soviet power are believed not to have been affected by Stalin's death. This estimate, therefore, is based on the trends within the Soviet Bloc since 1945, and does not attempt to estimate whether, or to what extent, these trends may be affected by changes within the ruling group.¹⁰

17. Conflict within the ruling group would be the internal development most likely to jeopardize Soviet stability during the period of this estimate. The dissatisfaction latent among large numbers of the Soviet population over low living standards and over the severity of police controls will remain great, but it will not constitute a threat to the stability of the new regime. The years of isolation and indoctrination and the campaign to instill hostility toward the West have almost certainly reduced but not eliminated the reservoir of popular good will toward the US. During the period of this estimate, the regime will almost certainly be able to reduce further the effect of external propaganda on the general population of the

¹⁰ The Special Assistant, Intelligence, Department of State, the Assistant Chief of Staff, G-2, and the Deputy Director for Intelligence, The Joint Staff, believe that this sentence should be replaced with the following:

It is impossible as yet to estimate with confidence whether or not a prolonged struggle for power among the new leaders will develop during the period 1953-1957. We believe, however, that if such a struggle for power should develop, it would be confined to the higher echelons of the Soviet Communist Party and Government and would probably not precipitate open conflict within or between the armed forces and security police, or involve the Soviet population. We estimate, therefore, that the stability of the regime in the USSR is unlikely to be jeopardized by differences that may develop among the Soviet leaders.

USSR and to continue rigorous limitations on access to Western information.¹¹

18. A major reorganization of Soviet agriculture might, at least temporarily, weaken Soviet stability. Before Stalin's death, there were indications that the Soviet regime might attempt a major reorganization of Soviet agriculture, through an attack upon the kolkhoz market and the private sector of agriculture. While we believe it unlikely that the new Soviet rulers will adopt this policy, there is not sufficient evidence to make this estimate with confidence. Such a move would ensure more complete control of agriculture and would satisfy the doctrinaire Communists. However, it would almost certainly evoke peasant resistance and disorganize the food supply, at least temporarily.¹²

¹¹ The Special Assistant, Intelligence, Department of State, and the Assistant Chief of Staff, G-2, believe this sentence should be replaced with the following paragraph:

We believe it improbable that any internal political development, including a possible struggle for power among Soviet leaders, will jeopardize the stability of the Soviet regime during the period of this estimate. As long as the Soviet leaders are able to resolve their differences or to keep incipient conflicts from spreading to the armed forces and security police, the existing system of controls over the population will almost certainly prevent any group or faction in the USSR from posing a serious threat to the Soviet regime.

¹² The Special Assistant, Intelligence, Department of State, and the Assistant Chief of Staff, G-2, believe this paragraph should be deleted. Although Stalin indicated in October 1952 that the Soviet regime was planning to introduce, at some unspecified time, measures that would reduce or eliminate that kolkhoz market and the private economy of collective farmers, he also stated that such changes could become effective only gradually and over a long period of time. The new leadership is certainly aware that a drastic change would probably antagonize the peasants and has specifically reiterated the need for caution in making any changes in the agricultural sector of the Soviet economy.

The Special Assistant, Intelligence, Department of State, and the Assistant Chief of Staff, G-2, believe the following paragraph should be substituted for paragraph 18:

The new Soviet leadership will almost certainly pursue the basic domestic policies established during recent years. In particular, it will continue to maintain a fundamentally hostile attitude toward the West and to emphasize the increase of Bloc military power and the expansion of the Bloc industrial base. It is also unlikely that the new leadership will institute any radical changes in Soviet agriculture during the period of this estimate.

The Satellites

19. Soviet control over the Satellites is virtually complete and is unlikely to diminish or to be successfully challenged from within during the period of this estimate. If a struggle for power should break out within the Soviet ruling group and if it were confined within the higher echelons of the Soviet Communist Party and Government, Soviet control over the Satellites would not be significantly affected.¹³ However, if the struggle within the Party should spread to the Soviet Army and the Soviet Security Forces and should lead to open conflict within or between these forces, Soviet control over the Satellites would be shaken.

20. In the unlikely event that the new Soviet rulers should adopt a policy of rapid collectivization of agriculture in the Satellites, peasant resistance would increase and agricultural production in the Satellites would decline for some time. However, even rapid collectivization of agriculture in the Satellites would probably not seriously shake Soviet control.

21. There will continue to be purges of the various Satellite Communist Parties, but the purges are unlikely to weaken the reliability of these Parties or their control over the Satellite populations. The USSR will almost certainly not be able by 1957 completely to isolate the population of the Satellites from Western information, and the passive hostility now general among the Satellite peoples will persist and perhaps increase. Intensive Communist indoctrination of selected segments of the population, including the youth, and favored treatment of some groups will almost certainly increase the number of supporters of the Soviet system.

¹³ The Special Assistant, Intelligence, Department of State, and the Assistant Chief of Staff, G-2, believe that this sentence should read:

Even if a struggle for power should break out within the Soviet ruling group, the struggle would probably be carried on within the higher echelons of the Soviet Communist Party and Government and would not significantly affect Soviet control over the Satellites.

Communist China

22. The Chinese Communist regime has firm control over mainland China, and there is little likelihood of its control being threatened or shaken by domestic forces within the period of this estimate, unless Communist China should suffer a serious military defeat or unless conflict should develop within the Chinese Communist Party over the relationship between Moscow and Peiping.

23. Communist China has accepted Moscow leadership in the international Communist movement, but appears to be more an ally than a Satellite. Moscow and Peiping present a united front to the world and are apparently agreed upon the following aims:

- a. To eliminate Western power and influence from Asia.
- b. To increase their military potential in Asia.
- c. To prevent the resurgence of an armed and non-Communist Japan.
- d. To advance the world Communist movement; in particular, to divide the non-Communist countries and to weaken their ability and determination to combat Communism.

24. The military dependence of Communist China upon the USSR will almost certainly increase, at least until the Korean war has ended. The Chinese Communists have launched an industrialization program, which will require large-scale imports of capital equipment. So long as Western trade controls continue, these requirements can be met only by imports from the Bloc. However, should there be a reduction of tension in Asia, the military and economic dependence of Communist China upon the USSR might be reduced.

25. Sino-Soviet relations may be strained by problems relating to levels of Soviet economic aid, by the extent of Soviet military commitments to Communist China, by disagreement over the control of border territories, and by the definition of Mao's role in the Asian Communist movement. However, we believe that the new Soviet leadership will deal cautiously with Mao and that a split between

Peiping and Moscow is unlikely during the period of this estimate, unless the stability of the Soviet regime should be seriously weakened.

Economic Factors¹⁴

26. The gross national product of the Bloc has been increasing rapidly during the postwar years. Calculation of its magnitude and comparisons with prewar years are necessarily subject to considerable error. We estimate, however, that the 1938 level of production for the Bloc as a whole had been regained by 1948. We estimate further that by 1952, Bloc gross national product was about one-third greater than in 1948, thus increasing on the average about 7-8 percent per annum.

27. The rate of growth of the Soviet economy will almost certainly remain higher than the rate which the US or any other major Western state will attain, unless there is a drastic reorientation of Soviet economic programs. We estimate that the Soviet average rate of growth during the period from 1952 to 1957 will be 5 to 7 percent annually and that Soviet gross national product will increase 30 to 40 percent.

28. Despite Soviet achievements during the postwar years, the output of the USSR will remain much lower than that of the US, and the output of the entire Bloc will remain much lower than that of the NATO states. We estimate that the Soviet gross national production was about one-quarter to one-third that of the US in 1952, and that the gross national product of the entire Bloc was about one-third that of the NATO states. These disparities in ratio terms will probably be reduced slightly during the period of this estimate, although the disparities in absolute terms will be widened somewhat. Bloc output in the basic industries — energy,

minerals, metals, and chemicals — will remain substantially below that of the NATO states.

29. However, comparisons in terms of total output of all types of goods and services are somewhat misleading as indicators of relative capacity to produce military equipment in peacetime. Since the end of World War II, the USSR has diverted a much larger proportion of its gross national product to military purposes than has any Western state. We estimate that about one-sixth of the Soviet gross national product is now devoted to military outlays, and that the proportion will remain at least as high through the period of this estimate.

30. The Bloc during the period of this estimate will almost certainly continue to concentrate upon expanding its industrial base. Total Soviet industrial production will probably expand by about 40 to 50 percent. Soviet production of consumer goods (excluding housing), will probably increase only about one-fourth to one-third. Satellite industry as a whole will probably expand rapidly, though not so rapidly as that of the USSR. Although industrial output in Communist China will probably also increase, it will continue to be a small part of the Bloc total. Production of consumer goods in the Satellites and in Communist China will probably expand more slowly than in the USSR.

31. Present per capita food consumption in the USSR (in terms of calories) is nearly equal to the 1935-1939 average. Agricultural output in the USSR will probably increase between 10 and 20 percent during the period of this estimate. The largest gain will be in non-food crops. Qualitatively, the average diet will probably improve somewhat during the period of this estimate.

32. Despite the growth of new centers of industry in the USSR, the older industrial regions (including the Urals) will still provide the bulk of Soviet industrial production. Programs to disperse Soviet industry and to create self-contained regional complexes will continue, but the production of many basic materials and of most equipment will remain geographically concentrated.

¹⁴ These estimates of Bloc economic developments are based largely upon postwar published economic plans and recent trends in the USSR, the Satellites, and Communist China. The estimates do not consider whether, or to what extent, these trends or plans may be affected by changes within the ruling group of the USSR or by developments outside the Bloc.

33. The Soviet stockpiling program is designed to maintain vital sectors of the economy under wartime or emergency conditions and to facilitate the conversion of industry to a wartime footing. We are unable to estimate the magnitude and composition of the Soviet stockpiles, but we believe increases in total production through 1957 will support a considerably enlarged strategic stockpile. Stockpiling has already begun in some Satellites, and we believe that during the period stockpiling programs will be adopted throughout the Bloc.

34. By 1957, the Bloc economy will have achieved a higher level of self-sufficiency than at present, although certain imported items will remain of substantial importance to Bloc industrial and military production. These items include electronic tube components, certain chemicals, certain types of machinery and equipment with their spare parts, and probably also tin, natural rubber, copper, zinc, and cork. If these items of import should cease to be available, bottlenecks would appear in the Bloc productive system, and for a limited period of time adverse repercussions would spread through the economy.¹⁵

35. We believe that Bloc capabilities for export to the non-Communist world will increase somewhat during the period of this estimate. We estimate that by 1957 the Bloc will be capable of exporting capital equipment and increased quantities of raw materials to the non-Communist world.

Scientific and Technical Factors¹⁶

36. Soviet scientific and technical capabilities have increased rapidly since World War II, and we believe that they will continue to increase throughout the period of this estimate. The USSR has given science and technology a high priority and has given great emphasis to increasing the contribution of science and

technology to Bloc military capabilities, with results most evident in air defense and in the development and production of atomic weapons.

37. The scientific assets of the US (the number and quality of trained personnel, facilities, equipment, and financial support) are greater than those of the USSR, and the assets of the West as a whole are far greater than those of the Bloc. However, the USSR is expending great effort to reduce this disparity, and it will probably continue to devote a higher proportion of its scientific and technical assets to military purposes than the US. Therefore, the difference between Soviet and US scientific capabilities in this period may not be so significant as the over-all superiority of the US in scientific assets would suggest.

38. Soviet higher education in most scientific and technical fields is roughly comparable to that of the West, but a shortage of scientific and technical personnel will continue throughout the period of this estimate. We estimate that there are slightly over one million Soviet citizens who have received scientific or technical degrees from colleges and universities (about three-fifths the US total). About 170,000 are people engaged in scientific research and in teaching science in the USSR, compared to about 210,000 similarly engaged in the US. We estimate that during the period of this estimate at least as many people will graduate in engineering and the physical sciences in the USSR as in the US.

39. Soviet science and technology are subject to the same type of centralized planning and control as all other Soviet activities. Even though Soviet scientists are a privileged group, their research is subject to many of the usual totalitarian restrictions. Such restrictions will probably have a more deadening effect upon long-range theoretical research than upon practical applications within the period of this estimate. While numerous theories in chemistry, physics, and biology have been attacked, there is no evidence that ideological restraints hamper developments directly affecting military weapons.

40. East Germany and Czechoslovakia, and to a lesser extent other Satellite countries,

¹⁵ For more detailed discussion of this problem, see NIE-59, "Probable Economic Effects of a Severance of East-West Trade" (16 April 1953).

¹⁶ These estimates of developments in Bloc science and technology are based on the assumption that scientific and technical capabilities will not be significantly affected by political developments.

possess scientific and technical manpower and facilities which provide a significant increment to the total resources at the disposal of the Bloc. On the other hand, Communist China, because of the extreme shortage of scientific and technical manpower and facilities, is unlikely to contribute to Bloc science.

Scientific and Technical Capabilities in Particular Fields

41. Since World War II, the USSR has made substantial achievements in atomic energy, aircraft design and production, electronics, and ordnance. Soviet science will continue to contribute substantially to the increase of Bloc military strength and capabilities throughout the period of this estimate, particularly in the following fields:

a. Atomic and Thermonuclear Weapons. The Soviet atomic energy program will continue to have one of the highest priorities in the allocation of Bloc resources. Soviet capabilities for atomic research will remain considerably less than those of the US in both personnel and equipment. We believe that the Soviet atomic energy program will continue to concentrate almost entirely upon the development and production of weapons.¹⁷

We have no evidence that *thermonuclear* weapons are being developed by the USSR. Basic research which may be related to a thermonuclear program is being carried on, and the USSR has a growing capacity for quantity production of materials which could be used in the development of thermonuclear weapons. Soviet research, development, and even field testing of thermonuclear reactions based on the disclosures of Fuchs may take place by mid-1953. However, it is very unlikely that the USSR could test a full scale thermonuclear device based on these disclosures before mid-1954. There is also a possibility that Soviet field tests based on independent research and development along other and advanced approaches to the thermonuclear weapons problem might occur by mid-1954. Testing of advanced models might be possible earlier if US developments were known through espionage or other compromise.

¹⁷ See paragraph 50 for the estimated size of the Soviet atomic stockpile.

b. Aircraft. Soviet aircraft laboratories and factories will continue to develop and produce aircraft of high performance qualities. By the end of 1957, most Soviet combat aircraft will be gas turbine (turbo-jet, turbo-prop) powered. Fighter aircraft superior to the Soviet jet fighter, the MIG-15, may already have been developed and may be in serial production in 1955. An all-weather jet interceptor may also have been developed, and such an interceptor may be in operational use before 1957. Within the period of this estimate, the USSR may complete development and begin serial production of a jet medium bomber. A heavy bomber based upon a type which has been seen in flight may be in production and may be available for operational use within the period of this estimate.

c. Electronics. The USSR has made substantial progress in expanding its electronics industry and in adapting Western equipment. It is now developing and putting into operation electronic equipment of modern design. The Soviet electronics industry is now capable of independent research and development and has the technical capability to produce complex electronic equipment. We believe that by 1957 the USSR will have developed and put into production the following equipment. We are unable to estimate the priorities given each of these kinds of equipment or the quantities of each kind which will be produced.

(1) Improved early warning radar with performances at least equivalent to the best now in operational use in the West.

(2) Ground control intercept radar for strategic areas by 1954, and for general deployment by 1957. (The USSR now has at least 50 V-Beam GCI sets in operational use.)

(3) Fire-control radar, including shipborne radar, comparable to equipment now in operational use in the West (by 1954); field radar for field artillery fire (by 1957); and airborne fire-control radar (by 1957).

(4) Blind bombing/navigation radar. (The USSR now has some operational aircraft with this equipment.)

(5) Airborne intercept equipment. The USSR almost certainly now has experimental quantities of some type of AI equipment, and it may have some type of AI equipment avail-

able for limited operational use, although the indications are not as yet conclusive. We estimate that AI will come into extensive use within the period of this estimate.

d. Electromagnetic Warfare. The USSR now has the capability seriously to disrupt Western long-range radio communications and navigation systems.¹⁸ Soviet capabilities in related electronic fields indicate that the USSR is now capable of developing equipment for jamming frequencies up through SHF, and the USSR could produce such equipment by 1957. If such equipment were produced on a large scale and placed in operational use, it would probably constitute a threat to Western short-range radio communications, navigation, and, to a lesser extent, bombing systems, unless Western anti-jamming capabilities were improved.

e. Chemical Warfare. The USSR has the capability to produce and disseminate standard CW agents. It also possesses scientific and technical capabilities for the production of nerve gases. Although there is much evidence of research closely related to chemical warfare, there is no evidence that any basically new chemical warfare end-item is likely to be developed by 1957.

f. Biological Warfare. On the basis of known and estimated Soviet capabilities, we estimate that the USSR can develop and disseminate several highly virulent BW agents. Within the period of this estimate, the USSR might also accomplish the directed mutation of selected viruses and bacteria and the crystallization of certain animal viruses. Success in the application of such research to the production of virulent and stable variants might increase Soviet BW capabilities.¹⁹

¹⁸ For more detailed information, see SE-38, "Soviet Bloc Capabilities and Probable Courses of Action in Electromagnetic Warfare" (24 April 1953).

¹⁹ The Assistant Chief of Staff, G-2, and the Director of Naval Intelligence believe that available scientific evidence at present raises doubt as to the probability of crystallizing animal viruses and indicates limitations as to which viruses could be crystallized. Furthermore, there is no evidence at this time that if one or several animal viruses could be crystallized that this would affect BW capabilities.

g. Guided Missiles. While we know that the USSR acquired German operational missiles, plans, and personnel and that a program to develop guided missiles has been in progress for several years, we lack adequate data to determine the priorities which may exist between the various categories of missiles, the characteristics of the weapons developed, and the quantities which are being produced. We know that the USSR has built at least a limited number of German V-1 and V-2 types. We believe that it has the capability to produce, within the period of this estimate, operational quantities of other guided missiles, including surface-to-air, air-to-air, and air-to-surface types. We also believe that the USSR has the capability of fitting atomic warheads to V-1 type missiles and of adapting submarines to launch such missiles.

MILITARY FACTORS AFFECTING BLOC CAPABILITIES ²⁰

42. The Bloc now possesses a significant quantitative superiority over the major Western Powers in combat forces-in-being and in conventional ground and air armament. Moreover, the Bloc profits from centralized control and direction and from greater geographical concentration.

43. *Total forces-in-being, including Security Forces.* Total armed force strength will probably increase by about 600,000 to a total of about 9,600,000 men.²¹ At present, the total is about 9,000,000, of which about 4,500,000 are Soviet; 1,600,000 Satellite; 2,450,000

²⁰ These estimates are based upon an analysis of trends in the development of the Bloc military forces, of current Bloc military strength, of the Bloc weapons research and development program, and of data from other sources. They do not consider whether, or to what extent, these trends or plans may be affected by changes within the ruling group of the USSR or by developments outside the Bloc.

²¹ For more detailed information concerning Bloc military strength, see the Appendices to NIE-64 (Part I), "Soviet Bloc Capabilities through Mid-1953" (24 December 1952) and the Appendices to NIE-90, "Soviet Bloc Capabilities through Mid-1955," which will probably be published in July 1953.

Chinese Communist;²² 300,000 North Korean; and 185,000 Viet Minh. Most of the increase in Bloc armed force strength will be contributed by the Satellites, whose forces-in-being will probably increase from about 1,600,000 to over 2,000,000 men.

44. *Ground Forces.* In 1957, Bloc ground troops will probably total about 7,500,000 of which 2,500,000 will be Soviet; 2,000,000 Satellite; 2,400,000 Chinese Communist; 300,000 North Korean; and 185,000 Viet Minh. The mobilization capacity of ground forces for M+30 will probably be about 16,000,000 men, compared with a present capacity of approximately 14,600,000. The disposition of Soviet ground troops will probably not change significantly, with about 65 percent remaining stationed in Eastern Europe and the Western USSR; 15 percent in the Far East; 10 percent in the Caucasus; and 10 percent in Middle Asia. The troops in East Germany will remain the most combat ready, and in general the troops along the borders will be considerably more combat ready than those in the interior.

45. *Air Forces.* We estimate that at present: (a) the actual strength of the Bloc air forces is about 21,500 aircraft, including 8,600 jet fighters, 950 piston medium bombers, and 1,300 jet light bombers, and (b) the authorized strength is approximately 26,000 aircraft, including 10,000 jet fighters, 1,200 piston medium bombers, and 1,950 jet light bombers. Over-all authorized strength is not expected to increase significantly by 1957, but the actual strength will probably be closer to the authorized strength than it is now.

46. The following significant developments are also expected by 1957: complete conversion of Soviet fighter and light bomber components to jet aircraft, and a marked expansion of the jet fighter and jet light bomber elements of the Satellite and Chinese Communist air forces. It is also possible that some jet medium bombers and turbo-prop heavy bomb-

ers will be introduced into the long-range striking force. We have very little information on Soviet development work on new types of medium or heavy bombers, but it seems safe to assume that the USSR is planning to replace the TU-4 piston medium bomber with aircraft of higher performance characteristics. While no Soviet prototype jet medium bomber is known to exist, there is firm evidence of the advanced stages of the development of the German-designed EF-150 jet medium bomber, and a prototype of such an aircraft may already have been flown. A prototype heavy bomber has been observed; it was probably then powered by piston engines, but it may now be powered by turbo-prop engines. This type of aircraft is not known to be in series production.

47. About 60 percent of the present total Soviet air strength, including nearly 65 percent of the jet fighter force and almost 85 percent of the medium bomber force, is now concentrated in the European Satellites and the western and southwestern portions of the USSR. We believe that these dispositions will not change significantly by 1957, except that about one-third of medium bomber strength will be in the Far East. The Satellite and Communist Chinese air forces will almost certainly remain dependent upon the USSR for logistic support.

48. *Naval Forces.* We believe that the present Bloc naval construction program will be continued, concentrating upon cruisers, destroyers, submarines, and patrol craft. The number of major surface vessels²³ will probably increase from about 215 to 305 units, and submarine strength will probably increase from about 371 (of which 195 are ocean-going types, i.e., 106 long-range and 89 medium range) to a total of about 430 (of which 215 will be ocean-going types, i.e., 175 long-range and 40 medium range). Soviet Naval Aviation will probably continue to

²² This does not include 1,450,000 Chinese Communist Public Security (provincial) troops, a lightly-armed and equipped full-time force, used largely for security purposes and as a source of trained manpower for the field forces.

²³ This includes all naval vessel types down to and including coastal destroyers. The figures for surface vessels include a number of obsolescent units; i.e., 4 battleship/monitors, 5 heavy and light cruisers, and 68 destroyer types. Submarines over 20 years old are considered obsolete and are not included in these estimates.

broaden its concept of operations and increasingly to stress fleet support tasks and coordinated operations with surface and submarine forces.

49. The USSR has the capability of building carriers and battleships (as well as cruisers) in all its fleet areas except the Far East, and the emerging pattern of its present building program indicates a concept of operations beyond defense of the coast. While it is possible that one or more battleships or aircraft carriers may be laid down, we do not believe that any capital ships other than cruisers will be completed during the period of this estimate. The Bloc will probably also continue to lack modern amphibious vessels. The Baltic fleet comprises about 40 percent, the Pacific and Northern fleets each about 20 to 25 percent, and the Black Sea fleet about 15 percent of the major surface vessel and submarine strength. We cannot estimate the type and extent of redeployment which will take place as new construction becomes operational.

50. *Atomic Weapons.* In our calculation of the Soviet atomic stockpile, weapon types yielding 30-100 kilotons are assumed. The estimate of the cumulative Soviet stockpile of such weapons follows. In view of our uncertainty concerning the production of fissionable materials, particularly uranium-235, the possible minimum and maximum quantities of weapons in that stockpile are also indicated.

Date	Estimate	Possible Range
Mid-1953	120	80- 240
Mid-1954	200	135- 400
Mid-1955	300	200- 600
Mid-1956 ²⁴	400	265- 800
Mid-1957 ²⁴	500	335-1,000

We believe that weapons yielding 200-500 kilotons are probably within Soviet capability and that the USSR could make smaller weapons (as low as 5 kilotons). In the event that the USSR should choose to stockpile weapons of smaller or larger yield, the number of weapons in the stockpile would be altered accordingly.

²⁴ The estimates beyond mid-1955 are tentative projections of the estimates for the earlier years.

51. *Over-all Trends.* We believe that the emphasis in the program for increasing Bloc military strength will continue to be placed upon modernizing the armed forces and upon enlarging the atomic stockpile.

52. The over-all capabilities of Bloc ground, naval, and air forces will almost certainly continue to increase during the period of this estimate as a result of: continued intensified military training; progressive modernization and standardization of weapons and equipment, particularly those incorporating electronic guidance and control; increased combat efficiency of Satellite and Communist Chinese forces; enlargement of the Bloc logistical base; and the growth of Soviet stocks of war materiel.

53. However, the Bloc armed forces will continue to be hampered by certain weaknesses: deficiencies in experience, training, and equipment for strategic air operations and air defense; the lack of experience and of specialized equipment for the conduct of long-range amphibious and naval operations; significant qualitative disparities between Bloc units, both within and between national forces; and the complicated logistics arising from the size of Bloc territory and the relatively inadequate road and rail network and merchant fleet.

Bloc Military Capabilities

54. We estimate that the Bloc now has the capability to undertake²⁵ concurrent large-scale operations in continental Europe, the Middle East, and mainland Asia. The Bloc could reinforce with Chinese Communist and Soviet forces the Communist forces now in Korea, and at the same time undertake²⁵ an invasion of Japan by Soviet forces.

55. Bloc naval forces (except for the ocean-going submarines, and new cruisers and destroyers) as now constituted are designed to protect Bloc coastal areas and the seaward flank of a ground campaign. However, the characteristics of the new construction now appearing, and the increasing coordination between Naval Aviation and the Fleet indicate a growing emphasis on offensive opera-

²⁵ No estimate of the success of these operations can be made without considering the effects of the actions of opposing forces.

tions. We believe that, as new construction becomes operational, emphasis will be laid on the creation of striking forces which could operate within the limits of the range of land-based air support. With respect to mine warfare, the USSR now has the capability of seriously interfering with Allied sea communications. In the European area, this effort could include all the ports and approaches of the UK and Western Europe. In the Far East, most of the vital Allied port areas and sea lanes around the perimeter of the Bloc could be similarly attacked. The advancement in the design and use of mines and the introduction of jet bomber types for minelaying purposes will increase this threat to Allied supply lines. The Soviet Navy will have no long-range amphibious capability within the period of this estimate, but it will remain capable of mounting short-range amphibious lifts in considerable force. The Soviet submarine force will increase its capability to undertake offensive patrols and mining operations along most of the world's strategically vital sea lanes, and possibly, if the specialized craft have been developed, simultaneously to launch guided missile attacks against targets on both the Atlantic and Pacific seaboard of the US.²⁶

56. The USSR now has the capability to undertake²⁷ concurrent air operations against the US, the UK, continental Europe, the Middle East, Japan, and the off-shore island chain of Asia. However, operations against the US would be much more difficult than those against the other areas. The USSR has the capability to reach all parts of the US and to attempt the delivery of its full stockpile of atomic weapons. However, even a stripped-down TU-4 could reach only the extreme northwestern corner on two-way missions without aerial refueling. Even with aerial refueling and other range extension techniques,²⁸

²⁶ We believe the USSR capable of adapting submarines to this use, but we have no evidence to indicate that such modifications have been made.

²⁷ No estimate of the success of these operations can be made without considering the effects of the actions of opposing forces.

²⁸ We believe that the USSR has the capability to utilize range extension techniques, but we have no evidence that any of these techniques have been exploited.

attack upon the strategic northeastern industrial area and upon most of the principal strategic bases almost certainly would involve the expenditure of the attacking aircraft and most of the crews on one-way missions. Until it has a heavy bomber available for operational use, the USSR will not have the capability to reach most of the strategically important areas in the US on two-way missions. A heavy bomber based upon a type which has been seen in flight may be in production and may be available for operational use within the period of this estimate.²⁹

57. We estimate that the Bloc has the capability of providing vigorous opposition against air attacks on critical targets in the interior of the USSR, under conditions of good visibility. Under clear moonlit night conditions, Bloc defense capabilities are fair against piston bombers and negligible against jet bombers. Under conditions of poor visibility, day or night, Bloc interception capabilities are negligible.

58. Currently known trends point to an increase of Bloc air defense capabilities during the period of this estimate. However, it is impossible to estimate the extent or significance of any increase, because the future development of AI equipment and of guided missiles is obscure; in any case, such an estimate would require knowledge of the characteristics of attacking aircraft through the period of the estimate.³⁰

²⁹ For more detailed information, see SE-36, "Soviet Capabilities for Attack on the US through Mid-1955" (5 March 1953).

³⁰ The Director of Naval Intelligence believes that this paragraph should read as follows:

We believe the Bloc will continue its present emphasis on air defense, and that its capabilities in this respect will increase during the period of this estimate. Operational use of improved early warning and ground intercept radar, and the extensive employment of airborne intercept equipment will contribute to this increase. The development and production of all-weather jet fighters and guided missiles, which are within Bloc capabilities, would further improve Bloc air defense. However, we cannot estimate the significance of these improvements relative to future air offensive capabilities.

FACTORS AFFECTING BLOC POLITICAL WARFARE STRENGTH

59. Political warfare plays an extremely important role for Communists, who consider military warfare only an extension of political warfare in their persistent campaign to undermine the strength of the non-Communist world. Bloc political warfare techniques include political and economic pressure, diplomatic manoeuvres in the UN and elsewhere, propaganda and front activities, the action of Communist Parties and Communist-controlled trade unions outside the Bloc, sabotage, exploitation of subversive and revolutionary movements and of civil wars, and psychological warfare.

60. The principal sources of strength upon which Bloc political warfare capabilities are based will remain Bloc military power, which generates fear and defeatism, and the Bloc's size, strategic position, economic power and potential, and centralized direction. Other sources of Bloc political warfare strength are the highly organized Communist international movement, and the leadership and discipline of the individual Communist Parties; Communist doctrine, which influences many non-Communists as well as Communists; and the accumulated experience and professional skill of Soviet intelligence, propaganda, and subversive organizations and of Soviet use of front organizations. Finally, the fixity of Communist purpose to impose Communism on the world and the unified direction of Communist action give the Communists a tactical political warfare advantage in determining the nature, direction, and intensity of courses of action to be used against the non-Communist world.

61. On the other hand, there are factors which tend to place limitations upon Bloc political warfare strengths. These include the limitations of the Communist philosophy and the Communist world outlook, especially in evaluating political developments in the non-Communist world; the Communist insistence upon the maintenance of totalitarian control; frequent conflicts between the interests of the Soviet Communist Party and the interests of other national Communist Parties; and in-

creasing awareness in the non-Communist world since 1945, especially in the West, of the actual conditions prevailing within the Bloc and of the Kremlin's aggressive intentions.

62. Bloc political warfare capabilities depend upon the stability and power of the USSR. These capabilities would be seriously reduced if a prolonged and indecisive struggle for power should develop within the Soviet Communist Party or if a struggle for power within the Soviet Communist Party should spread to the Soviet Army and the Soviet Security Forces and should lead to open conflict within or between these forces.

63. For some time, the new Soviet leaders will not be able to achieve Stalin's status as the symbol of the international Communist movement and as the undisputed leader of World Communism. This may have an adverse effect upon rank-and-file Communists outside the Bloc, at least temporarily, although we believe that the loyalty of the hard core of the Communist Parties outside the Bloc will not be impaired. If there should be a prolonged struggle for power within the Soviet Communist Party, the cohesion of the international Communist movement would almost certainly be weakened.

64. It is difficult to estimate how Bloc political warfare capabilities will develop, since they depend to a large degree not only upon the situation within the USSR but also upon the success with which the non-Communist world meets the challenges to its stability which would exist even if there were no Communist threat. Thus, Bloc political warfare capabilities would increase if the non-Communist world should fail to maintain economic prosperity; if nationalist conflicts in Western Europe should be intensified; if conflicts between the US and its allies should undermine the program for improved Western defenses; and if nationalist movements in colonial areas should stimulate rebellions against the Western Powers. Bloc political warfare capabilities would decrease if the non-Communist world during the period of this estimate should succeed in neutralizing or overcoming the dangers arising from problems such as these.

65. It is also difficult to estimate the development of Bloc political warfare capabilities because they are in large part dependent on the relative military strength of the Bloc and the West. If Western military strength should increase, relative to that of the Bloc, Bloc political warfare capabilities would probably decline. On the other hand, fear of war and consequent vulnerability to Bloc political warfare would probably increase in the non-Communist world, if the Bloc's capabilities to deliver atomic weapons should increase relative to Western defenses, and if the Bloc should improve its air defenses relative to Western offensive capabilities.³¹

Bloc Political Warfare Capabilities

66. We believe that during the period of this estimate Communist capabilities to establish Communist governments by political warfare techniques will be most likely to increase in Southeast Asia and the Middle East. In these areas, the political and economic foundations of some states are unstable, and political changes are often sudden and violent. Communist capabilities for infiltration and insurrection may increase because of the intense nationalism in those areas, the social disintegration and economic dislocations which afflict those societies, and the ineffective leadership of the governments. These capabilities will probably remain greatest in Iran and Indochina.

a. Iran. Iran will probably remain politically unstable, and the Tudeh Party will re-

³¹ The Director of Naval Intelligence believes that this paragraph should read as follows in order to render the military hypothesis more realistic and inclusive:

It is also difficult to estimate the development of Bloc political warfare capabilities because they are in large part dependent on the relative military strength of Bloc and the West. If Western military strength and cohesion should increase substantially relative to that of the Bloc, Bloc political warfare capabilities would probably be checked, or even decline in some areas. On the other hand, if the over-all military strength of the Bloc should increase substantially relative to that of the West, Bloc political warfare capabilities would rise, particularly with respect to the promotion of appeasement, apathy, and the fear of war.

main a danger throughout this period, since the National Front appears to be insufficiently unified to develop a stable government and since the peasants will remain restive. However, a settlement of the oil crisis might diminish Tudeh capabilities.

b. Southeast Asia. The Communists will continue to have dangerously significant capabilities for political warfare in this area, with the probable exception of the Philippines. The political fate of most of this region may be decided in Indochina.

67. In other areas of the world, the Communists have some capability to establish Communist governments through political warfare techniques, but their capability to influence the attitudes of non-Communist governments and peoples will constitute the principal danger posed by Bloc political warfare. The Communists may be able to undermine support for Western programs of defense and for increased political and economic unity, and they may be able to heighten tensions among the members of the Western coalition. For these purposes, they can exploit national differences between the Western Power, economic and trade difficulties, nationalism in colonial and dependent areas, and dread of war.

a. Western Europe and Japan. In Western Europe and Japan, the Communist Parties will retain a capability to harass governments, to confuse opinion, and to interfere with parliamentary processes, even though some of these Parties will probably decline in size and in influence. Moreover, in these areas the Bloc may be able to use economic warfare with particular effectiveness. For example, the Bloc may be able to conclude and to fulfill trade agreements damaging to the trade pattern and to the export controls of the non-Communist states.

b. Germany. The Communists retain the capability to use the German problem to undermine the Western program for defense and for increased unity. This capability will become increasingly dangerous unless Western Germany is formally brought into the Western coalition in the near future and unless the fears of France are calmed. Even if

Western Germany is brought into the Western coalition, the traditional mutual suspicion between Germany and her Western

European neighbors will probably continue to offer opportunities for creating dissension and friction.

