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**NATIONAL INTELLIGENCE ESTIMATE**

**NUMBER 11-4-59**

**MAIN TRENDS IN SOVIET CAPABILITIES  
AND POLICIES, 1959-1964**

*Submitted by the*

**DIRECTOR OF CENTRAL INTELLIGENCE**

*The following intelligence organizations participated in the preparation of this estimate: The Central Intelligence Agency and the intelligence organizations of the Departments of State, the Army, the Navy, the Air Force, The Joint Staff, NSA, and AEC.*

*Concurred in by the*

**UNITED STATES INTELLIGENCE BOARD**

*on 9 February 1960. Concurring were The Director of Intelligence and Research, Department of State; the Assistant Chief of Staff for Intelligence, Department of the Army; the Assistant Chief of Naval Operations for Intelligence, Department of the Navy; the Assistant Chief of Staff, Intelligence, USAF; the Director for Intelligence, The Joint Staff; the Assistant to the Secretary of Defense, Special Operations; the Director of the National Security Agency, and the Atomic Energy Commission Representative to the USIB. The Assistant Director, Federal Bureau of Investigation, abstained the subject being outside of his jurisdiction.*

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## MAIN TRENDS IN SOVIET CAPABILITIES AND POLICIES, 1959-1964

### THE PROBLEM

To review significant developments affecting the USSR's internal political situation, economic, scientific, and military programs, relations with other Bloc states, and foreign policy, and to estimate probable Soviet policies and actions over about the next five years.<sup>1</sup>

### SUMMARY OF THE ESTIMATE

#### PROBABLE TRENDS IN SOVIET EXTERNAL POLICY

1. Over the last year Soviet policy toward the West has veered from extreme provocation in connection with the Berlin issue to a warmly expressed willingness to seek new avenues of accommodation through negotiation. We believe that, fundamentally, this change of tone is derived from tactical considerations and that the principal objectives of Soviet policy vis-a-vis the West remain unchanged. The Soviet leaders currently show great confidence that the trend of events, in what they continue to think of as an inevitable struggle

with the non-Communist world, is in their favor. Their rate of economic progress, their scientific and space successes, their advances in missile development, their estimate of the political tendencies in the underdeveloped countries (despite setbacks in some areas) all suggest to them a growing shift in world power relations favorable to the Communist cause. These considerations as seen by the Soviet leaders permit their policy to be less rigid than formerly. From the position of strength which they believe they now have they see themselves as able not only to engage the West vigorously on disputed issues when they wish to do so, but also to relax tensions when expedient without any imputation of weakness. They consider themselves able at the same time to pursue their programs of internal development, including the betterment of living standards and the furtherance of rapid economic growth.

<sup>1</sup> The reference to a five-year period is approximate. The estimates on the Soviet economy carry through 1965, to conform to the Soviet Seven-Year Plan. Judgments on many other matters pertain to periods of less than five years, and, particularly on political questions, are intended for the most part to apply for the next year or two.

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2. We believe that, over the next five years, neither a policy single-mindedly directed at eliminating East-West tensions nor a policy of pressure with a steadily belligerent tone is likely to be followed by the USSR. We expect to see elements of both pressure and detente combined and varied as tactical advantage may suggest. For the nearer future the present emphasis on negotiation and accommodation seems likely to continue; later the motif of pressure and struggle will probably reappear. Whatever alternation of emphasis may occur, however, the swings are likely to fall within a range which excludes, on the one hand, the deliberate assumption of serious and uncontrollable risks of general war, and, on the other, abandonment of the concept of continuing struggle between two irreconcilable worlds.

3. Given Khrushchev's unchallenged personal ascendancy, his views are likely to be the primary determinant in Soviet policy for the present. His attitudes are marked on the one hand by a strong sense of the growth of Soviet military and economic power and by a crude and truculent pride in asserting the claims of that power to the world's attention and deference. He has been free in his vigorous use of missile threats. On the other hand, he apparently thinks it possible to win recognition for Soviet views through persuasion rather than by force alone. He clearly understands the horrors of nuclear war and his proclaimed dedication to economic advance appears to be sincere. He probably genuinely believes that the Soviet system can prove its superiority in "peaceful" competition, although he recognizes that Soviet power plays a vital role in this competition. Thus, the con-

tradictory tendencies toward belligerence and accommodation in Soviet policy are probably in some degree a reflection of the attitudes and personality of Khrushchev, and may persist so long as he is the commanding figure on the Soviet scene.

4. The immediate outlook is that the Soviets will continue their present tactics of detente at least through the initial phase of the series of high-level negotiations now in view. A period of partial detente presumably serves a number of useful purposes from Moscow's point of view. First, it enables the USSR to ascertain through negotiations what positions the West is now willing to take in view of increasing Soviet strength, and provides a suitable and superficially alluring framework for possible Western concessions. Secondly, even barring specific agreements with the West, Moscow probably views high-level East-West talks as an acknowledgment by the West of the permanence, legitimacy, and equal status of the Communist Bloc. Finally, during such a period of detente the Soviets would hope to improve their relative power position still further, since they would expect Western military programs to be carried on with less urgency.

5. Beyond this phase the outlook is less certain. The main influence shaping Soviet policy is likely to be the Soviet leaders' sense of their improved power position relative to that of the West. In another year or two they may feel that their capabilities in long-range missiles have brought them into a period when the relations of military power are the most favorable from their point of view. At some stage, they will almost certainly wish to test the chances of drawing ad-

vantage from this situation if it emerges as they expect. They will still try to win Western concessions basically through negotiation. But the element of pressure and threat will probably become more pronounced, perhaps much more so, than at present. The Soviet leaders may think it possible to undertake more provocative behavior in areas where they are in contention with Western power and influence. In their view, the emerging stand-off of intercontinental striking forces marks a stalemate only of general war capabilities. They consider that this situation of mutual deterrence would open up new opportunities for advancing Communist power by political, economic, and perhaps even limited military means. We believe, however, that even then they would not wittingly assume serious risks of general war. We believe that they would draw back if the Western response were of such vigor that in their view more extensive Soviet involvement would entail either serious risk of general war or net political loss. At the same time, we believe that the chance of their miscalculating risks may increase if they remain convinced that their relative power is growing.

6. Although the Soviets have allowed the Berlin crisis to diminish in intensity, the issues involved in it will remain of high concern to their policy. They will continue to seek an arrangement about Germany under which both sides would accept at least tacitly the indefinite division of the country. To this end, they will continue to press for some form of Western recognition for East Germany. They see such a development not only as a contribution to the stability of Communist

power in Eastern Europe as a whole, but also as a blow against West Germany's relations with NATO which it is their consistent purpose to undermine. On the Berlin issue itself, we believe that, as long as the Soviets are confident that they can make progress towards their aims in Germany by negotiation and propaganda, they will probably abstain from any major interference with Western access to Berlin and from making a separate peace treaty with East Germany. If they decide that further progress is impossible by comparatively mild methods, they will probably make the separate peace treaty, though they would not necessarily try at the same time to obstruct Western access to Berlin.

7. In the coming phase of negotiation, the Soviets are likely to continue to give priority to disarmament. By taking the initiative in this field they will expect to earn broad political dividends since hopes for peace throughout the world are associated with a desire for disarmament measures. The Soviets may actually wish to see a freeze or even a cutback in some armaments in order to improve their potentialities for long-run political and economic competition, but we do not believe that they are obliged for economic reasons to seek a far-reaching arms reduction agreement. They would probably not even regard such an agreement as desirable since they consider that their great military strength is an essential ingredient in the challenge they pose to the non-Communist world. Moreover the Soviet aversion to extensive foreign controls and inspection in the USSR persists, and will almost certainly exclude anything more than limited agreements.

8. Even if Soviet policy seeks stabilization in Europe and a reduction of tensions in relations with the Western Powers, it will probably be increasingly active in the underdeveloped countries of Asia, Africa, and Latin America. The Soviets see in the political ferment in these areas growing opportunities for eliminating Western influence, and ultimately the likelihood of a revolutionary turn which will bring Communist controlled forces to power. The policy of appealing to governments in such areas through trade and aid and other conventional forms of diplomatic influence will probably continue to provide the general framework for Soviet actions. From time to time, however, the Soviets will probably have to decide whether the prospective gains of a local Communist attempt to seize power in one or another country would justify compromising this policy and undertaking the risks and difficulties of supporting revolutionary action. During the period of this estimate there are likely to be cases in which the Soviets will be more disposed than they have recently been to support such militant action by local Communist parties, although they would probably be cautious about involving the Bloc in military support to such action.

#### INTERNAL DEVELOPMENTS AND THEIR EFFECT ON THE SOVIET POWER POSITION

9. The challenge which the USSR will pose for the West over the next five years will rest upon a continuing growth in the bases of Soviet power—military, economic, and scientific. Advances in these aspects of national power can be expected in a great state which has reached a stage of development in which it can for the

first time realize its full potentialities. But this process is accelerated in the USSR by the presence of a political leadership which is single-mindedly committed to the aim of aggrandizing the power of the Communist system. It is always possible that the upward trend in the growth of Soviet power internally could be arrested by the appearance of political instabilities, either within the USSR or in its relations with other Communist states, but at present we see no basis for estimating that this is likely to be the case.

#### Military Developments

10. The single most important development affecting the structure of Soviet military power during the period of this estimate will be the buildup of an ICBM force. Long-range missiles will enable the USSR to overcome its inferiority to the US in nuclear strategic attack capabilities, as it was unable to do with bomber aircraft. Because of the uncertainties, risks, and high economic cost involved in acquiring ICBM capabilities which would permit them to plan attacks on Western retaliatory forces with the degree and certainty of success required to insure that the USSR could win a general war without itself incurring unacceptable damage, we do not believe that the Soviets will attempt to build an ICBM force sufficient for this purpose. Nevertheless, they will probably build a substantial long-range missile force. They will almost certainly wish to have a high degree of deterrence, and beyond this, should deterrence fail, a force offering as much promise of success for a pre-emptive attack, or indeed for a retaliatory attack,



as can be bought within acceptable margins of economic cost. Also, and again consistent with acceptable cost, the Soviets will probably build up their planned force rapidly in order to capitalize through political exploitation on their lead over the West in missile development. On the basis of these criteria, we estimate that the probable ICBM program will provide in mid-1961 a number of missiles on launcher on the order of 140 to 200.<sup>2</sup> More tentatively, because of technical and political factors which may affect Soviet plans in the interim, we estimate that Soviet ICBMs on launcher are likely to number in the range of 250-350 in mid-1962 and 350-450 in mid-1963.<sup>3</sup>

11. Despite the effort which we estimate that the USSR will make to build long-range attack forces, it will almost certainly not do so at the cost of sacrificing its other military capabilities. The Soviets consider that their military policy requires a range of nuclear and nonnuclear capabilities permitting flexibility in the choice of means and the scale of operations in accordance with the political objectives sought in a particular area. The Soviet leaders probably believe that such varied capabilities become even more important under mutual deterrence from general war when, in their view, pressure and threat, maneuvers and coups, even undeclared local wars may be undertaken with greater freedom and pushed further than

in the past.<sup>4</sup> Thus we believe that the Soviets will continue to maintain substantial ground, air, and naval forces, and that to the maximum possible extent these forces will be dual purpose, capable of employing nuclear or nonnuclear weapons, as circumstances dictate.

12. In addition to the buildup of long-range missile capabilities there will be a number of other major developments in the Soviet forces over the period of this estimate. The effectiveness of the air defense system against bomber aircraft will be increased by the new surface-to-air missiles now being installed on a considerable scale for the defense of vital areas, and by additional control and warning systems to improve reaction times. The most significant developments in the ground forces will be the widespread introduction of missiles for tactical use and the achievement of greater mobility resulting from new motorized equipment, transport aircraft, and helicopters. The Soviet Navy will probably continue to give priority attention to the development of

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<sup>4</sup> The Director for Intelligence, The Joint Staff, and the Assistant to the Secretary of Defense, Special Operations, do not concur in the estimate that the USSR probably believes that it can undertake the actions described with greater freedom and can push them further than in the past. Such a Soviet judgment would, in the view of the above members of the USIB, necessarily involve an estimate by the Kremlin that Western—particularly the United States—response to their pressures and probings would lack the vigor necessary to dissuade them. They do not believe that the Soviets will make such an estimate.

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<sup>2</sup> The views of the members of the USIB vary as to the most probable number within this range. See the statement of their separate views in Note A following this summary.

<sup>3</sup> The Assistant Chief of Staff, Intelligence, USAF, dissents from this paragraph. See his statement in Note B following this summary.

The Assistant Chief of Staff, Intelligence, USAF, would revise the sentence in question as follows: The Soviet leaders probably believe that if *mutual deterrence from general war eventuates*, such capabilities *could* become even more important, when pressure and threat, maneuvers and coups, even undeclared local wars may be undertaken with greater freedom and pushed further than in the past.

submarines, and the buildup of a nuclear-powered and missile-launching submarine force will be the most important addition to Soviet naval capabilities.

### Economic Developments

13. Although the continuing rapid expansion of the Soviet economy aimed at in the Seven-Year Plan (1959-1965) will encounter a number of serious problems, we believe that the goal of an 8.6 percent annual increase in industrial output will in the main be achieved. As in the past the plan in agriculture will not be achieved, and net output is likely to rise by about one-fifth in the seven-year period as against a proclaimed goal of about 55-60 percent. The position of the Soviet consumer will continue to improve, though at a somewhat slower rate; consumption goods and services per capita will probably increase about 26 percent during the plan period as compared with a 40 percent gain over the preceding seven years.

14. Even though some goals of the Seven-Year Plan may not be achieved in full, Soviet gross national product (GNP) will probably continue to grow at about 6.0 percent per annum. Such a rate of growth is impressive by any absolute standards and will bring the Soviet economy measurably closer in size and strength to that of the US. Assuming that the US maintains an average annual rate of growth in GNP of about 3.5-4.0 percent, Soviet GNP measured in dollars will increase from about 45 percent that of the US at present to about half that of the US by 1965. However, more important than this rough comparison of the gross size of the two economies is a comparison of the uses to which national

resources are put. The smaller Soviet economy has in recent years supported military expenditures which, measured in dollars, were about equal to those of the US. Likewise Soviet investment in the economy as a whole is currently almost equal to that in the US, and Soviet investment in industry may be somewhat greater. As a result of this steady allocation of large resources to growth, by 1965 the absolute annual increment to GNP in the USSR will approach that in the US.

15. The Soviet leaders are aware that sustained and rapid economic growth is an important asset in the world power struggle. It will enable them to carry the burden of competitive armaments more easily. The USSR will be able to enlarge its aid programs, and perhaps ultimately compete in world markets in an important way. This will mean political leverage in many countries. If, in addition, the Soviets can finally raise living standards enough to demonstrate that their system provides for the growth of welfare as well as the expansion of national power, they will expect the influence of communism to spread even more rapidly. The Soviet leaders can be counted on to press the growth of their economy in all ways open to them, including substantial structural reforms when necessary, in order to achieve the political goals which they regard as the real aim of economic policy.

### Scientific Developments

16. The achievements of its scientists have become one of the principal instruments of the USSR's prestige and influence, and the Soviet political leadership has been

astute in exploiting this fact as a demonstration of the superiority of the Communist system in competition with the West. The Soviet successes arise from a generous commitment of resources over the years to training personnel and providing research facilities, from the fact that the motivations and incentives of scientists in the Soviet environment are high, and especially from the concentration of effort in fields related to national power. The rate of advance of Soviet science appears to be increasing, and the current Seven-Year Plan, which relies heavily on scientific and technological achievements, will provide additional impetus. Thus, significant Soviet advances in science and technology are likely to occur with greater frequency than in the past, and over the next several years, the USSR may achieve world leadership in some additional scientific areas. It will probably add a number of "firsts" in prestige fields. In the immediate future, these are most likely to occur in the Soviet space program, but the quality and intensity of research on such problems as controlled thermonuclear reactions and direct conversion of heat to electricity may produce spectacular results in other scientific fields.

#### Internal Political Developments

17. The outlook on the Soviet internal political scene points to continuing stability. Khrushchev's position as leader has become virtually unassailable, and if he lives, will probably remain so during the period of this estimate. While there may be elements within higher Party circles which mistrust his leadership, it is unlikely that, in the absence of a major failure of his policies, any effective opposi-

tion could form. Given Khrushchev's age, however, the prospect of a new succession problem probably already figures in inner Party maneuvering. Khrushchev's demise is most likely to be followed by another period of "collective leadership" and a phase of contention for the top position. We continue to believe that the Soviet system has an inherent tendency to revert to one-man dictatorship. The inevitable struggles for power which this produces are not likely to menace the stability of the regime, much less alter the nature of its most basic policies. However, the fact of personal government is likely always to affect profoundly the manner and tone of Soviet policy. Thus, Khrushchev's successor might bring to the conduct of Soviet policy features quite different from those characteristic of the present dictator.

18. The years of Khrushchev's rise to power have been marked by a series of reforming changes intended to cope with problems raised by past policies and with new conditions resulting from rapid industrialization and modernization. The relaxation of police terror and a greater concern for living standards, some greater degree of ideological flexibility, wider foreign contacts, a more pragmatic and innovating spirit applied to institutional arrangements—all these are changes of a more than transitory character which, even if there should be some reversion, will have a lasting influence on the future evolution of the Soviet system. Their main effect for the present has been to give the Soviet people a hopeful sense of forward movement, and therefore probably more satisfaction with the regime and its goals than has existed at any time in the Soviet period. But it does not

follow that the changes which have taken place so far forecast a more basic evolution away from totalitarian dictatorship. A modern industrial society is not necessarily incompatible with a totalitarian political system, especially in a nation like Russia with a long authoritarian tradition. In any case, for the period of this estimate we see no prospect of change on the Soviet domestic scene so fundamental as to diminish the motivation, will, or capacity of the regime to project its rapidly growing power externally.

#### Soviet Relations with Other Communist States

19. The challenge which the USSR presents to the non-Communist world will be much affected by the extent to which Soviet authority over a unified bloc of the Communist states is maintained. In Eastern Europe Soviet authority appears more firmly established than at any time since the events of 1956. Poland's potential instability continues to be an unsettling factor in Eastern Europe, although the disruptive influence of its deviations in internal policy seems to be declining as the Gomulka regime moves toward a tighter discipline. However, there are signs that Communist China is becoming less disposed to accept Soviet guidance in domestic and foreign policy, even though it has outwardly complied on a number of disputed issues in recent months. We believe that the problem of intrabloc harmony is far from being resolved. Disharmony is likely to arise repeatedly with the appearance of new issues, and in the long run will probably be one of the more critical problems with which the Soviet leaders will have to cope.

20. The main challenge to Soviet authority and unity within the Communist Bloc in the future is likely to come from China. The Sino-Soviet relationship will probably become increasingly complicated and difficult as Chinese power and prestige increase, and as Soviet levers of authority over China become less effective. Frictions have already arisen over extremist tendencies in Chinese internal policy, over Chinese ideological pretensions, over foreign policy tactics, and probably over whether the USSR should supply nuclear weapons to China. These or other frictions may be magnified in the future. The Chinese have always reserved their right to exercise independent judgment on doctrinal and tactical issues. We believe that they will increasingly exercise this right, not only in domestic affairs, where direct Soviet influence has always been minimal, but in external affairs as well. Thus each party to the Sino-Soviet alliance may come to act more in terms of its view of its own national needs and interests. This does not mean, however, that an open rupture is in sight; both parties recognize that their alliance is vital to them in confronting the hostile forces of the non-Communist world.

#### Note A

##### *Views on the Soviet ICBM Program*

We have concluded that the probable Soviet ICBM program would provide on the order of 140-200 ICBMs on launcher in mid-1961. Within this range, the Assistant Chief for Intelligence, Department of the Army, and the Assistant Chief of Naval Operations for Intelligence, Department of the Navy, estimate that the Soviet program is likely to be toward the low side. The Director of Intelligence and Research, Department of State, the Assistant Chief of Staff, Intelligence, USAF, and the Director for Intelligence, The Joint Staff, believing that Soviet planners would regard the advantages to be gained as justifying additional effort, estimate that the number of Soviet ICBMs on launcher is likely to be towards the high side of the 140-200 range.

*Note B**Dissent on the Estimate of the Soviet ICBM Program*

The Assistant Chief of Staff, Intelligence, USAF, does not believe that Soviet behavior, as we have observed it, warrants the judgment that their objectives would be satisfied by attainment of only substantial deterrence and pre-emptive attack capability. Rather, he believes that the Soviet rulers are endeavoring to attain at the earliest practicable date a military superiority over the United States which they would consider to be so decisive as to enable them either to force their will on the United States through threat of destruction, or to launch such devastating attacks against the United States that, at the cost of acceptable levels of damage to themselves, the United States as a world power would cease to exist. He further believes that such an objective could be attained by the development of their overall military capabilities which would include an operational ICBM force of about 250 (185 on launcher) by mid-1961, 500 (385 on launcher) by mid-1962, and 800 (640 on launcher) by mid-1963.

It is generally agreed that the Soviets have both the technical and industrial capability to produce such a force; the physical difficulties thereby entailed will almost certainly not be the limiting factor.

It is the view of the Assistant Chief of Staff, Intelligence, USAF, that, while Soviet planners will undoubtedly feel that they will have attained a capacity for substantial deterrence and pre-emptive attack by mid-1962 or earlier, the real objective of the Soviet ICBM program is "decisive military superiority." He believes that the Soviets would not be content with conceptual levels of deterrence; they would realize the possibility of error in their own calculations and acknowledge the possibility of Western pre-emption of their deterrent capabilities. This latter contingency would weigh the more heavily if the Soviet leaders intended, as he believes likely, to exploit their capabilities in political offensives. In this event, their estimate of the likelihood of Western "desperate" acts would induce them to attempt attainment of total deterrence, i.e. "decisive military superiority."

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## ESTIMATE

### I. INTERNAL POLITICAL DEVELOPMENTS

#### Khrushchev's Position As Leader

21. Khrushchev's position as the leader of Soviet Russia has become virtually unassailable, and if he lives, will probably remain so during the period of this estimate. While there may be elements within higher party circles which mistrust his leadership, it is unlikely that, in the absence of a major failure of his policies, any effective opposition could form. A moderate personality cult has begun to envelop the new leader, who now evinces a serious interest in establishing his own place in world history. As Lenin is the founder of the Soviet state, and Stalin the builder of Socialism in one country, so Khrushchev evidently hopes to go down in history as the leader who brought Russia to the threshold of communism and gave the Communist Bloc a decisive weight and influence in the world.

22. There is no indication that Khrushchev will resort to the terroristic methods employed by Stalin at the peak of his power. Khrushchev appears genuinely concerned to develop another image of himself—as the leader who exercises power humanely and in close response to the will of Party and people. There probably is, in fact, a freer and franker consultation within the inner circle of the top leadership than there ever was in Stalin's time. The regime has even allowed some degree of influence by interested groups on some measures of lesser political consequence, as for example in the cases of the educational reform and the reorganization of scientific institutions. However, there has been no evidence that decision-making will assume a more constitutional character, and in fact Khrushchev himself could react to possible policy failures by adopting more arbitrary methods. In any

case, the role of the people continues to be a passive one.

23. Given Khrushchev's age, the prospect of a new succession problem probably already figures in inner Party maneuvering. Khrushchev himself has indicated that Kozlov would be the successor, but probably meant this only in the sense that Kozlov's position as a First Deputy Prime Minister made him the logical next Chairman of the Council of Ministers. There would almost certainly be other contenders for the real power, which will continue to reside in whoever has control of the central Party apparatus. Khrushchev's demise is most likely to be followed by another period of "collective leadership" and a phase of contention for the top position. We continue to believe that the Soviet system has an inherent tendency to revert to one-man dictatorship. The inevitable struggles for power which this produces are not likely to menace the stability of the regime, much less alter the nature of its most basic policies. However, the fact of personal government is likely always to affect profoundly the manner and tone of Soviet policy. Thus, Khrushchev's successor might bring to the conduct of Soviet policy features quite different from those characteristic of the present dictator.

#### Change in Soviet Society under Khrushchev

24. As Khrushchev's policies have unfolded it has become more and more clear that his rule was to be marked by significant changes in the USSR. Some of these changes were intended to mitigate the evils of Stalin's time—its police terror, its isolation and xenophobia, its neglect of living standards—all of which

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had come to be real obstacles to the country's internal development and to the spread of Communist influence outside the Bloc. But Khrushchev is evidently attempting to do more than correct evils and remove negative features. He is concerned to introduce a pragmatic and innovating spirit which will free the development of Soviet society from the constraints of stale doctrines, insure a continuing growth of Soviet power, and at the same time improve the material lot of the Soviet people.

25. *Regime and People.* Perhaps the most significant change that Khrushchev has introduced has been in the relationship between the Soviet regime and the people. Whereas Stalin seemed to assume that there was an implacable hostility between regime and people, Khrushchev has acted on the belief that by-and-large the loyalty of the Soviet people could be trusted. It was on this basis that he altered Stalin's control system, relying mainly upon material incentives and promises to stimulate active cooperation instead of using unpredictable police terror to cow the Soviet people into submission. This did not mean, of course, that the regime was prepared to allow anything like real freedom or to deprive itself of its controls through the Party and police apparatus to maintain discipline as needed. At most it meant that, instead of being regarded as enemies, the Soviet people came to be treated as good though potentially wayward children. Against the experience of almost three decades of Stalin's terror this comparatively benevolent but watchful paternalism has evidently seemed to the great majority of Soviet people to be a considerable gain. The effect of this and such other equally important factors as the gradual improvement in living standards, scientific successes, and gains in international prestige has been to bring about what is probably a wider sense of satisfaction with the regime and its goals than has existed at any time in the Soviet period.

26. *Renovation of the Party.* Khrushchev has also sought to revitalize the Communist Party, and to make of it a more responsive and efficient instrument of rule. Its ascendancy over other organs of power—the police, army, and

state bureaucracy—which seemed to be threatened at various times in the unsettled years following Stalin's death, has been firmly re-established. The corps of full-time workers in the Party apparatus has been reduced 40 percent, and a number of replacements have occurred in the middle ranks with the announced aim of advancing able younger men and of retiring incompetents. Moreover, an attempt is being made to improve the technical and professional training of Party members participating in the operation of the economy. In consequence, the regime has probably improved its ability to obtain effective administration of its programs.

27. *Economic Reorganization.* It is in the organization of the economy that Khrushchev's innovating temperament has found greatest play. The changes of economic administration with the setting up of regional economic councils in 1957 have apparently helped somewhat to reduce the snarl of overcentralization in the Moscow ministries and to give room for initiative at the operating level in industry. The attack on agricultural stagnation with new land expansion and measures to improve the efficiency of collective farms has resulted in significant gains in output. But beyond particular measures, the willingness to remodel old institutions and procedures in the light primarily of the criterion of productivity has apparently given fresh stimulus to the Soviet economy as a whole.

28. *Ideological Flexibility.* In a society governed as much by ideology as is that of the USSR, there is always the danger that doctrine will become a barrier to adaptive change as the society's evolution presents new problems. Khrushchev is determined to narrow and if possible eliminate in the shortest possible time the disparity which exists between Soviet theory of how things ought to be and the reality of the existing system; in brief, he wants to make Soviet socialism work. He has attempted to enhance ideology as an inspirational force by presenting his reorganizations and reforms as a programmatic transition into communism. At the same time, he often promulgates necessary measures and afterwards seeks such ideological justifications as

may be indicated. He has emphasized that Marxism-Leninism is a doctrine which should be open to new insights. It was this tendency toward what his supporters called "creative Marxism" and what his opponents labeled as "practicism" which was apparently one of the issues between Khrushchev and his opposition. With his victory in the inner Party struggle, Soviet policy acquired a far more flexible and practical approach to its problems.

29. *Wider Foreign Contacts.* Finally, among the more significant changes of the Khrushchev regime has been a new manner in the conduct of relations with the outside world. Leaving aside the consequences of this in foreign policy proper (see Chapter VI), it has also had important repercussions on the internal scene. The willingness to permit some wider degree of contact with the non-Soviet world, to lift the garrison atmosphere which Stalin had imposed, has tended to alleviate popular mistrust of the regime. For the professional class, especially in technical fields, the wider contacts have apparently been of particular value. At the same time, the regime has reaped a solid advantage in greater access to knowledge of developments abroad, which was a prime motivation in opening contacts.

#### Problems for the Future

30. The changes discussed above have been intended to cope with certain problems raised by past policies and by rapid industrialization and modernization. This they seem to have done, at least for the present. Especially as seen from within the framework of its own assumptions, Soviet society is probably in a sounder and healthier state today than it was at the time of Stalin's death. At the same time, however, the new measures and the natural processes of change are together creating a new set of conditions in the USSR. It is likely that current policies will themselves give rise to serious problems. It is even possible that the new measures of recent years mark the beginnings of basic change in the nature of Soviet institutions.

31. It is clear that the Soviet leaders themselves have been disturbed at some of the "negative" manifestations which have accompanied their loosening of the reins. Economic officials have had to be warned against diversion of resources to local purposes. The reappearance of national minority sentiment has evoked purges of local party organizations. Antireligious propaganda has again been somewhat intensified. Pressure on writers and intellectuals for conformity has been alternately eased and tightened. The educational reform introducing work requirements into student programs has provided in addition to its other purposes a means of discipline against excessive interest in "alien bourgeois" influences. Beyond such measures of discipline and warning, however, the regime apparently counts mainly on stimulating greater popular support and even some revived ideological fervor through its promise that a "new stage" in the building of communism is beginning, a stage in which there will be greater material benefits for all.

32. The effects on the Soviet people of the regime's current policies, in particular the lessening of fears and tensions and the broadening of contacts with the West, are extremely difficult to forecast. In a short period, such as that covered by this estimate, the regime probably runs no very serious risks. It will probably continue to be cautious and selective with respect to the outside contacts it permits, and it will retain ample means of acting against dissidence if necessary. It is probably also correct in its calculation that increasing material benefits and pride in the USSR's scientific achievements and status as a world power will tend to offset the discontents which may be stimulated by increased education, by a wider diffusion of administrative responsibility, by freer communication within the society, and by broader knowledge of the outside world. Moreover, despotic government is so much a part of the Russian historical experience that it tends to be accepted by the people as normal. In addition, the Soviet regime is likely to be sufficiently responsive to popular desires and pressures to avert the expression of discontent in any really serious form.



33. Some observers have suggested that basic change could occur in the Soviet system by a process of institutional evolution away from totalitarian dictatorship. In our view, a modern industrial society is not necessarily incompatible with a totalitarian political system, especially in a nation like Russia with a long authoritarian tradition. However, it is possible to imagine circumstances in which a collective organ of authority like the Central Committee of the Party could come to dominate the system, and give it a more representative character. This might happen, for example, if a dominating individual leader failed to appear at some juncture, and if at the same time there was a decline in the Party's ideological authority accompanied by popular

pressures for more liberal and moderate government. Any such combination of circumstances seems remote at this time. Moreover, the Communist Party is a hard political school which seems likely to go on producing forceful leaders. Hence, insofar as it is possible to formulate judgments on matters of this kind at all, a prediction that the Soviet system is likely to endure for a long time in essentially its present form seems the only safe one to make. In any case, for the period of this estimate we see no prospect of change on the Soviet domestic scene so fundamental as to diminish the motivation, will, or capacity of the regime to project its rapidly growing power externally.

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## II. DEVELOPMENTS IN THE SOVIET ECONOMY

### MAIN EMPHASES OF SOVIET ECONOMIC POLICY

34. Soviet policy continues to emphasize rapid economic growth and maximum expansion of the bases of national power. The Seven-Year Plan (1959-1965) is presented as a decisive step toward matching American achievements in economic output, and toward bringing Soviet society into the era of communism. The mood of the leadership, which evidently feels itself to be on the highroad of major accomplishment in Soviet competition with the West, is one of solid optimism. Indeed, the Soviet leaders, though aware of serious problems confronting them, claim that they will fulfill the Seven-Year Plan, or at least certain aspects of it, ahead of schedule.

35. This optimism has a solid basis in the performance of the economy over the last two years and in the success of various reforms that have been adopted. The industrial reorganization was carried out without serious disruption and is now operating tolerably well. Measures to expand agricultural production and increase efficiency have achieved a substantial degree of success. A major reallocation of investment funds in 1957 and 1958 to raw material industries appears to have alleviated the raw material shortages that appeared in 1956. Industrial growth over the three years 1955 to 1958 has been 8-10 percent annually. Due in large part to a bumper harvest, growth of GNP in 1958 was probably in excess of 9 percent as compared to 6 or 7 percent in the preceding years. In 1959, on the other hand, there has been a severe drought and on this account the growth in GNP will be curtailed.

36. The major theme of the Seven-Year Plan, as in the case of its predecessors, is the growth of heavy industry. Output of producers goods is again scheduled to grow at a more rapid annual rate (9.3 percent) than output of consumers goods (7.3 percent). Total industrial production is to grow at an average annual rate of 8.6 percent. Although outputs of basic industrial materials are generally to grow more slowly than in the past, their rates of growth still involve tasks of considerable magnitude and represent progressively larger annual additions to production in absolute terms. Production of steel, for example, is planned to grow at a rate of about 7 percent annually, in contrast with a planned rate of 8.6 percent in the abandoned Sixth Five-Year Plan, and the 10.7 percent achieved in the Fifth Five-Year Plan. But the quantity of crude steel produced in the next seven years is scheduled to jump from about 55 to 85-90 million metric tons per year. In chemicals, a startling advance is planned. Output in this field is slated to triple and will include for the first time significant quantities of plastics, synthetics, and petrochemicals.

37. The task of the regime is made more difficult by the inclusion in the Plan of important secondary themes in addition to the development of heavy industry. The regime has made such emphatic promises to improve the material standards of the population that it may find it difficult to sacrifice consumption and welfare goals, as it has often done in the past, when their achievement threatened other production targets. The greatest single effort in favor of the consumer will come in alleviating the extreme shortage of housing. The regime claims that new construction under the plan will increase the total urban

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housing space by about 60 percent. Achievement of this goal would raise urban living space per capita by about one-third. Even with this increase, however, per capita living space for city dwellers will still be only about three-fourths of the official sanitary norm of nine square meters.

38. Another secondary theme of current Soviet planning is the continuing effort to find more effective forms of organization in agriculture, the condition of which must appear to the leaders to present a painful contrast to their progress in industry. The grandiose plan for a 70 percent increase in gross agricultural output appears to be based, not on any significant extension of the area under cultivation, but rather on increases in yields, obtained by greater use of machinery and fertilizers, proper crop rotation, and improved seeds. Both livestock numbers and output per animal are to increase. In addition, emphasis will be placed on improved management practices.

39. Achievement of these Soviet objectives in industry, agriculture, and consumption rest primarily upon a very substantial increase in the planned investment program. Overall, the sums invested are to be 80 percent greater than in the preceding seven years; in agriculture alone they are to be doubled. Measured in rubles, the proportion of the national product ploughed back into the economy, a quarter at the beginning of the Plan period, is to be one-third by its end.

#### PROSPECTS AND PROBLEMS OF THE SEVEN-YEAR PLAN

40. The road to the broad horizons of 1965 is not, however, without obstacles. Postwar recovery, and the period of relatively easy gains through improvements in technology and management, are over. Another new factor is a sharp decline in the rate of increase of the population of working age. These facts call for new approaches to the problems of economic development. The Soviet response is along three lines: (a) efforts to bring a larger proportion of the population into the labor force; (b) efforts to modernize industrial equipment and hence achieve rapid growth in productivity of labor; and (c) efforts to im-

prove economic management including improvement of incentives at all levels.

41. Each of these efforts is attended by uncertainty. It is correspondingly difficult to foresee the degree of success the Soviet leadership may have or the further expedients to which it may resort. On the whole, we do not believe that the problems which are described in the following paragraphs will prevent the nonagricultural sectors of the economy from achieving the Plan goals. However, Khrushchev has loudly proclaimed his expectation that the goals will be fulfilled ahead of schedule. The problems are serious enough to make such an achievement very questionable, and they are fundamental enough, especially in the field of management, so that the way in which the regime copes with them will have much bearing on the further evolution of the Soviet economic system.

#### The Labor Supply Problem

42. One of the main problems which confronts the Soviet planners in the period 1959-1965 is that of labor supply. According to the Seven-Year Plan, state employees (i.e., all except the armed forces and collective farmers) are to increase by 12 million persons, whereas the natural increment to the labor force, because of low birth rates during World War II, will amount only to about eight and a half million. So large a gap between labor required and the available supply could endanger fulfillment of the Plan, especially in view of the pledge to reduce hours of work and the high gains in labor productivity which are already assumed in the Plan. The Soviet leaders have already begun to attack this problem on a broad front.

43. The measures the regime is undertaking will, we believe, permit it to achieve its labor force goals. Khrushchev has recently announced his intention to cut the military establishment by 1.2 million. A cut of this order during 1960-1962 will materially ease the labor supply problem during the period when the natural increase in the labor force will be smallest. Further increments of workers also may come from the 15-19 age group because of the probable continuation until 1962

of the current downward trend in the proportion of this age group enrolled in fulltime school. The opening of more restaurants and public nurseries will release women for the labor force. The shorter work week and the higher minimum wages for unskilled workers may also serve to increase female participation. Whatever portion of the gap in the planned increase in the state labor force is not covered by transfers from the armed forces and greater labor force participation by the population as a whole can, we believe, be obtained by transfers from the collective farms.

### Investment and Labor Productivity

44. In the past, industrial labor force goals have been overfulfilled by wide margins and have compensated for failure to meet labor productivity plans. Since labor will be harder to obtain during 1960-1965, productivity is a key factor in meeting industrial output goals. This fact has led to a changed pattern of investment. It is a pattern intended to insure the high gains in industrial labor productivity—5.5 to 6.0 percent annually per man—on which Plan fulfillment depends. Except in the raw material sectors of industry, increases of output are to come in relatively greater degree than before from increasing productivity of existing plants than from the construction of new capacity. A determined and centrally directed program for modernization of existing plant and equipment is under way throughout the economy, with emphasis on automation and mechanization. Specialized machine tools are to be made available at nearly double the previous rate. Railroads are being dieselized and electrified. There is to be a major expansion of civilian air transport using several new aircraft types now coming into service, and a six-fold increase in passenger and freight traffic by 1965 is planned. The shift away from coal to more easily transportable fuels, such as oil and natural gas, will continue and become more pronounced; coal is to supply only 42 percent of energy consumed in 1965 as against 59 percent in 1958.

45. While modernization will increase labor productivity it will also bring problems of its own. Frequent and widespread retooling is a

new problem for Soviet managers; it is only recently that the regime has officially recognized obsolescence as an acceptable concept in depreciation accounting. Illustrative of the difficulty is the significant drop in production experienced at one time or another during 1957-1959 by the machine tool, agricultural equipment, and automotive industries as a result of change-over to new types and models. The evidence suggests that Soviet managers may be somewhat slow in mastering the complex problems involved in plant modernization, especially since this is now to be attempted throughout the economy. Thus achievement of the planned rate of modernization is doubtful, and to the extent that it is not achieved, overall Plan goals will be more difficult to fulfill.

46. The task of achieving continuing high rates of increase in labor productivity is also being attacked by a growing emphasis on incentives, material and psychological. Khrushchev's entire consumer program represents in part an effort to persuade the Soviet population to work harder and to produce more for reasons of enlightened self-interest. His insistent propagandizing of the themes of a bright and prosperous future and of a growing Soviet power in the world are also intended to stimulate extra effort. More concrete incentives are being offered in promises to shorten hours of work and to raise wages. By the end of 1962 a 40-hour work week is promised for all state employees, and by the end of the Plan period the transition to a 35-hour week is to have begun. Meantime the average wage of the state-employed worker is to increase by 26 percent, and the wages of the lowest paid categories of workers by 75-80 percent.

### Management Problems

47. During the period of the Seven-Year Plan output gains will depend increasingly on efficient management, particularly with regard to the introduction of new technology. A new bonus system, recently introduced, is aimed at making managers at all levels more cost-conscious. Up to now, the Soviet managers, whose bonuses were tied to overfulfillment

of output goals on a rigid time schedule, were reluctant to experiment or to risk interrupting production to introduce new machinery and procedures. Under the new bonus rules, managers' bonuses are tied to the plant's success in cutting production costs while still meeting output goals. These new rules should encourage a more receptive attitude toward new technology. Moreover, an intensive propaganda campaign currently is being carried out against the reluctance to innovate, and additional special incentives toward this end probably will be introduced shortly. At the same time, scientific research is being reorganized to emphasize "applied" research and to connect research institutes more closely with industrial plants.

48. The industrial reorganization of 1957 was an attempt to overcome the inefficiency of huge central bureaucracies by assigning a limited role to newly created regional administrations. It has evidently been beneficial in some respects, notably because it has speeded up decision-making, and has given more room for initiative at the operating level. However, it has produced a side effect, denounced by the regime as "localism," which is apparently causing concern. The two most important manifestations of localism so far are failure to fulfill interregional delivery contracts and diversion of resources to nonproducing projects, such as recreational facilities, which are not approved by central authorities. In some instances (Latvia, for example) localism has also taken on the complexion of minority nationalism. The problem has been kept under control, however, by special punitive legislation, by firing offending officials, and by the creation of party control units at the factory level.

#### Planning Problems

49. A growing problem of the Soviet economy is the lack of reliable efficiency criteria as a basis for economic planning. The system of setting prices and production targets without relation to real costs has resulted in widespread waste and inefficiency. This becomes more troublesome as the economy becomes more complex, for continued rapid growth

then depends more upon closely calculated investment choices. These are difficult in the absence of a relation of prices to each other which accurately reflects the real costs of producing various goods.

50. The Soviet leaders have responded to these problems by encouraging economists to discuss the criteria for investment choice and proper price setting. They have also permitted enlarged contacts between Soviet and Western economists in order to obtain the benefit of the more cost-conscious Western planning techniques. They are setting up, as part of the new scientific academy in Novosibirsk, a center to apply Western input-output analysis, and are equipping it with a high speed electronic computer. They are taking a census of capital plant and equipment which could provide the kind of data required for such analysis. In addition, they have created a new State Scientific-Economic Council with ministerial status for directing and coordinating economic research related to planning problems and have placed it in charge of a leading planner (Kuzmin). Through such improved planning methods the Soviet leaders aim to maximize efficiency and growth without endangering the central political direction of the economic system. Apparently they do not plan any drastic reforms for the present. They may be led eventually, however, to consider further institutional changes which, as in 1957, could produce sharp conflict between those who remain politically doctrinaire and those who approach economic problems in a more pragmatic spirit.

#### Problems in Agriculture

51. Agriculture has long been a problem for the Soviet economic planners, and will remain so in the years ahead. Not only have they set extremely high requirements for gains in output, but they evidently intend to reduce the amount of labor available to achieve the gains, since the labor supply scheduled for industry will necessarily require some withdrawals from the farms. They have planned to increase greatly the amount of machinery available to the farms, but if there are difficulties

in fulfilling plans for industrial modernization this ambitious goal may not be met. It is true that Soviet agriculture is notoriously inefficient and that there is room for great productivity gains, especially if the planned larger scale of investment is carried out. However, it is probably also true that in order to achieve these gains, the Soviet leaders will attempt to make some important changes in the collective farm institution.

52. The general tendency of these changes has been apparent from certain reforming measures of recent years and from others now projected. The system of multiple prices set by the state for agricultural commodities has been replaced by a single price system which diminishes the great income disparities among farms by increasing the earnings of poorer collectives and reducing the incentives of collectives and their members to sell on the free market. Some collectives are already going over to monthly cash wages instead of year-end payments based on labor days and it is likely that this development will be greatly extended. Better management practices, in particular cost accounting, are being promoted. There is to be a rapid development of rural industry, in part under the auspices of new collective farm associations which will pool their indivisible funds (capital savings) for this purpose. Such industry, mainly in construction and food processing, will utilize labor released by the better organization of work on the farms, and will also provide seasonal employment. At the same time, the share of state farms in total output and particularly in marketing will increase further.

53. Altogether these and other such measures are intended to increase the efficiency of collective farm production and raise peasant income so that farmers will have an incentive to work harder on the collective farms and in associated industries instead of on their private plots. Ultimately the regime hopes to be able to induce the suspicious peasantry to give up its private holdings of land and livestock and become exclusively dependent upon the communal economy. Khrushchev

clearly intends to be cautious in moving in this direction. However, the regime is in earnest, both on practical and ideological grounds, and local authorities might be tempted to proceed with an excess of zeal and pressure which would provoke peasant resentment, perhaps on a scale sufficient to create a considerable political-social problem.

### Consumer Expectations

54. A further problem confronting the Soviet leadership is that created by their political commitment in the field of consumption and public welfare. If Plan fulfillment falls behind schedule, the temptation will be strong to maintain the rate of growth of producers goods by sacrificing promised improvements in material welfare, as in the past. But in this event the leadership would have to face the possibility that such a failure might reduce the cooperativeness of the labor force, and thus jeopardize the growth rates of heavy industry. Once having embarked upon a policy of seeking the active cooperation of the masses through promises of higher consumption, the regime may find that these promises impose some restraints on its freedom of action. In the final analysis, however, the regime would probably prefer to cut back on the fulfillment of promises to consumers rather than to curtail any of its high priority programs.

### The Level of Military Expenditures

55. Between 1955 and 1959 annual Soviet military expenditures probably have declined. Implementation of the military reductions announced on 14 January 1960, will reduce expenditures for military manpower, and for certain programs marked for curtailment. However, total military costs will still probably increase since the savings will be more than offset by the rising costs of new weapons systems. Military expenditures should cause no unusual strain to the economy; during the period of this estimate they will probably average approximately 10 percent of GNP.

## FOREIGN TRADE

56. The achievement of output goals in industry is to some extent dependent upon imports of production equipment. This is true in the fields of petrochemicals, synthetics, communications electronics, and perhaps in ferrous metals. The growth of Soviet exports will be at a rate sufficient to improve their prospects of obtaining such imports, although some difficulties will be encountered in Western markets. Soviet foreign trade will probably grow more rapidly than Soviet GNP, while the proportion of it involving free world countries will probably rise from one-fourth to about one-third. In the machinery and equipment field the USSR will try to increase its imports of more complex items from the industrial nations, both within and outside the Bloc. At the same time, its exports of complete industrial plants, transportation equipment, and farm machinery will continue to increase in absolute and perhaps also in relative terms.

57. Imports of machinery and equipment from the European Satellites, more particularly from East Germany and Czechoslovakia, are scheduled to double in value during the next seven years, and will satisfy most of Soviet import requirements in these fields. These imports will be paid for largely with increased quantities of Soviet iron ore, petroleum, coke and other industrial raw materials. But Soviet-Satellite trade generally, which currently comprises about one-half the Soviet total, will be proportionately somewhat less important by 1965. The excess of Soviet exports over imports in trade with the Satellites, which reflects Soviet shipments under credits after 1956 will soon disappear, after which Satellite repayment should result in a Soviet import surplus.

58. About 40 percent of Communist China's foreign trade is with the USSR and machinery and equipment presently account for about half of Soviet exports to China. These machines are of great importance in the Chinese industrialization program; they represent one-quarter of the construction costs of those plants designated as the hard core of China's

industrialization program. The Chinese payment for them is increasingly useful to the USSR. It is composed primarily of consumer goods, such as textiles, and raw materials which are scarce in the USSR, e.g., tin. The food deficit areas of the Soviet Far East are drawing an increasing share of their supplies from China. The Chinese share of Soviet trade (now approximately one-fifth) will probably remain about the same during the Plan period. Chinese determination to develop a self-sufficient industrialization program will probably have no perceptible effect on Sino-Soviet trade until 1965 or after.

59. The USSR will continue to expand its programs of trade and aid to the non-Communist underdeveloped countries. As the USSR becomes more affluent its leaders may be more willing to exchange industrial equipment for such commodities as cocoa, coffee, fibres, and other consumer raw materials which are the staples of underdeveloped countries. The principal determinants of the volume of this trade will be the political gains foreseen by the USSR and the receptivity of underdeveloped nations to Soviet overtures. Moreover, as their affluence increases, the Soviets might be more inclined to enlarge the element of grant aid, which has been minimal in their programs so far, especially where they saw a real political advantage.

60. The USSR will try to increase sharply imports from the industrial nations of the West, particularly of critical machinery and equipment, over the period of the Plan. In the early part of the period, the USSR may encounter considerable difficulty in finding and marketing additional exports necessary to pay for these imports. Thus, the Soviet Government will probably, if political conditions are favorable, continue to press for Western credits. In view of the uncertainty of getting such credits, however, the Soviet leaders will be prepared to take the steps necessary to acquire the requisite foreign exchange. They can, for example, increase Soviet exports of gold, though the increasing cost of producing this metal will reinforce their effort to seek other solutions. Also by selling at prices below those prevailing in

world markets, they can increase such exports as petroleum, lumber, and selected metals. They can to some extent obtain hard exchange by developing trade in third markets, by promoting tourism, and by further reducing their dependence on foreign shipping.

## PROSPECTS FOR GROWTH

61. We believe that the Soviet leadership will find adequate solutions to most of the problems described above and that in industry the goals of the Plan will in the main be achieved. The one significant exception may be the ambitious program in chemicals, whose goals in plastics, synthetic rubber, and fertilizers will be very difficult to fulfill. The general problems arising from modernization of industry can be solved, if need be, by above-Plan allocation of investment and labor to industry, but at the cost of slower growth in other sectors of the economy. Moreover, the scheduled growth rate of 8.6 percent per annum for industry as a whole is relatively modest, and the question is really whether the Plan in industry can be completed ahead of schedule, perhaps even in five years, as the Soviet leaders evidently hope. It is at this higher level of accomplishment that their problems in labor productivity and management assume serious proportions.

62. As in the past, the plan in agriculture will not be fulfilled and the shortfall is likely to be large. The goal of a 70 percent increase in gross output implies a net increase of approximately 55-60 percent. Under normal weather conditions and given the inputs which we estimate will be made available, net output is expected to rise about one-fifth, or an average of about 2 to 3 percent per year. Labor productivity will rise faster, but the planned increase will also not be realized. As small an actual increase in annual output as we presently foresee may not be acceptable to the Soviet leadership. It is possible that further new programs and additional commitments of resources may be undertaken. This could result in faster growth, but even in this event we do not believe that the Plan can be fulfilled.

63. Percentage gains in total consumption will be somewhat less than in the preceding seven years. We believe that the availability of consumption goods and services per capita will probably increase about 26 percent during the Plan period, as compared with a 40 percent gain over the preceding seven years. However, striking gains will probably be made in certain commodities having particular popular appeal, such as clothing, consumer durables and—for the urban consumer—animal products. Most striking is the projected increase in housing both urban and rural, providing for a per capita increase almost four times as great as that of the past seven years. Although the state is apparently determined to fulfill the program, if difficulties develop elsewhere in the economy, the housing program may not be fully achieved. Nevertheless, the position of the Soviet consumer will continue to improve, even though at a somewhat slower rate than in recent years. This latter fact, if noted at all by the Soviet people, will be offset by gains in the quality of goods and especially by the long-desired improvement in housing, so that popular attitudes are likely to be little affected.

64. Even though some goals of the Seven-Year Plan may not be achieved in full, or ahead of schedule, the Soviet national product will probably continue to grow at about 6.0 percent per annum. Industrial output will probably achieve an annual growth rate of 8.6 percent, as planned.

65. These rates of growth are impressive by any absolute standard, and will bring the Soviet economy measurably closer in size and strength to that of the US. Comparisons between the two economies depend, however, not only upon the validity of estimates respecting the USSR but also on the accuracy of assumptions about US economic growth, and on the realism of various ruble-dollar ratios used in computation. We calculate that at present Soviet GNP measured in dollars is about 45 percent that of the US, and Soviet industrial output about 39 percent. Soviet investment in the economy as a whole is almost equal to that in the US, and Soviet investment in industry may be somewhat greater. Soviet



military expenditures in recent years (measured in dollars) were approximately equal to those of the US. Assuming for the US an annual GNP growth rate in years to come of 3.5-4.0 percent, and an industrial growth rate of 4.0-4.5 percent, in 1965 both Soviet GNP and Soviet industrial output will be about half that of the US. By 1965 the absolute annual increment to Soviet GNP will approach, but still not quite equal, that in the US.

66. A more striking and significant comparison is that between the allocation of resources and effort in the two economies. With a GNP less than half that of the US, the USSR already devotes almost the same amount (measured in dollars) to investment in the economy as a whole as does the US; Soviet investment in industry alone may be somewhat greater than US industrial investment. Likewise, the USSR already spends about the same amount (measured in dollars) on its military establishment as does the US. Such a use of resources assures rapid economic growth and a maximization of national power.

#### Implications of Soviet Economic Growth

67. The Soviet leaders are aware that sustained and rapid economic growth is an important asset in the world power struggle. It will enable them to carry the burden of competitive armaments more easily. The USSR will be able to enlarge its aid programs, and perhaps ultimately compete in world markets in an important way. This will mean political leverage in many countries. If, in addition, the Soviets can finally raise living standards enough to demonstrate that their system

provides for the growth of welfare as well as the expansion of national power, they will expect the influence of communism to spread even more rapidly. The Soviet leaders can be counted on to press the growth of their economy in all ways open to them, including substantial structural reforms when necessary, in order to achieve the political goals which they regard as the real aim of economic policy.

68. The Soviet Union is the first national society which has made planned growth the central objective of its economic system. Thus far this has meant forcing growth primarily in the means of further growth and simultaneously in the economic facilities necessary for great military power. These will remain the decisive goals for a period as brief as the next five years and probably much longer. But the time may come when growth for its own sake and for expanding the means of national power will no longer seem rational or sufficient ends of national policy. If this happens, the Soviet system might, in order to make use of its great productive power, turn at last to the aim of satisfying the long suppressed desires of its people for a higher material standard, becoming in some degree a consumer-oriented society. On the other hand, Soviet politics are so profoundly and exclusively oriented toward power that to alter course significantly in this respect would require a very great ideological and political transformation. No such change in basic Soviet goals can be forecast at this time. Whether or not it ever occurs will depend greatly upon how the world political environment develops and upon the policy alternatives which it poses for the Soviet leaders.

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### III. SOVIET SCIENCE AND TECHNOLOGY<sup>5</sup>

#### Role of Science in Soviet Society

69. The USSR has for many years placed great emphasis on scientific and technological progress as basic to the growth of its military, economic, and political power. It has allocated a substantial and increasing part of the national product to a scientific and technological effort focused primarily on the building of a strong industrial base and the development of modern weapons. As a consequence, Soviet achievements in certain areas of critical military and industrial significance are comparable to and in a few cases exceed those of the US. Scientific work which is less directly related to industrial development and military power has also received strong support, albeit of lower priority, and Soviet scientists have made outstanding contributions in many areas of fundamental research.

70. The high place assigned science and scientists in Soviet society has been an important factor in scientific achievement. In terms of social position and financial status, Soviet scientists have long constituted a privileged group. They also enjoy great popular esteem, derived in part from traditional European attitudes toward learning, and in part from the influence of an ideology which exalts science. These conditions, together with the fact that many scientific fields permit an escape from immediate political involvement impossible in most professional activity, have made scientific careers attractive to the Soviet intelligentsia. In those areas of learning having no immediate ideological import the current Soviet environment is for the most part favorable, considerably more freedom being granted the individual scholar than under Stalin. For their part, Soviet scientists as a group appear

to be dedicated to their work, politically loyal or at least apolitical, and animated frequently by a spirit of intense competition with the US. Although Party control of science now seems to be tightening, it is directed in the main toward better administration and a more effective scientific contribution to technological advance, and there will probably not be a return to the extreme interference which characterized the late Stalin period.

#### Resources and Administration

71. The number of scientific and technical graduates in the USSR has increased approximately threefold in the postwar period and is now significantly larger than that in the US. Soviet numerical superiority results primarily from the larger number of persons graduating as engineers and agricultural specialists; the US leads in numbers of physical and biological scientists. These relationships probably will persist for a number of years. The work of the best Soviet scientists is on a par with that of leading Western scientists, and, since training programs have steadily improved, the quality of the whole scientific corps is rising. However, we believe that the capability of Soviet scientific and technical professional manpower as a whole is still inferior to that of the US. On the basis of current trends, by 1964 Soviet scientific-technical manpower will be about one-third larger than that of the US, and probably roughly comparable in quality. The lessening of differences in quality and the increasing Soviet advantage in numbers will present a growing challenge to the West.

72. The Soviet educational system, probably more than any other in the world, concentrates on training scientists, technicians and skilled labor. This emphasis will be intensified by the educational reorganization now underway. On the secondary level, this reorganization reflects a new emphasis on pre-

<sup>5</sup> For a fuller account of this subject, see NIE 11-6-59, "Soviet Science and Technology," dated 21 July 1959, SECRET.

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paring Soviet youths for jobs in industry and agriculture as opposed to the previous emphasis on college-preparatory training. Virtually all children of secondary school age are to have some work experience either in the form of shop training in the schools or on-the-job training in farming or industry. The full-time secondary school curriculum has been expanded to include additional vocational training as well as some additional hours in academic subjects. These changes should result in a considerable improvement in the quality of Soviet workers. On the college level, students in practical disciplines such as agriculture, medicine, and some engineering fields must acquire work experience relevant to the subject matter of their studies. This is true also with respect to students in theoretical scientific and technical fields although the requirement for work experience seems to be applied somewhat less rigidly. The greater emphasis on work experience probably will improve the quality of graduates in practical engineering and applied science.

73. Current Soviet expenditures for research and development are estimated to be at least 40 billion rubles—twice the estimated 1953 level. These expenditures, when measured in dollars, are considerably more than half those of the US, even though Soviet GNP is presently estimated at only about 45 percent of US GNP. Furthermore, the Soviet effort has been far more highly concentrated on fields related to national power; about two-thirds is believed to be for military or related purposes. While this emphasis will probably continue, the rate at which scientific and technical resources are increasing will permit some greater attention in the future to consumer goods fields, and larger technical aid programs abroad.

74. Over the last few years, Soviet expenditures for research and development have increased at a slightly greater rate than GNP. The rate of growth over the next five years probably will be somewhat lower, but still appreciable. In any event, past trends and announced So-

viet plans give reason to believe that strong financial support will continue to be provided for the scientific and technical effort in the USSR and that Soviet expenditures probably will permit full utilization of new personnel and facilities.

75. The economic reorganization of 1957 abolished many of the industrial ministries and reassigned research institutions formerly under their control. Generally, it appears that administrative control over institutions conducting high-priority research remains centralized, while administration of lower priority research has been decentralized. A new Siberian Department of the Academy of Sciences has been formed which will have within its jurisdiction two new scientific centers now under construction at Novosibirsk and Irkutsk. To date, the major changes in scientific organization involve: (a) considerable administrative and geographic decentralization; (b) closer ties between science and technology directed toward greater emphasis on practical results of research; (c) improved planning and coordination of research as a whole. There is evidence that additional changes are impending which appear to have similar objectives.

#### Level of Achievement

76. The more spectacular Soviet achievements to date have resulted primarily from the concentration of resources in a few high-priority programs, while capabilities in other important areas have advanced more slowly. However, the USSR now has the capability and apparently the intention to advance on a much broader front. During the past three decades, the USSR has laid a solid foundation for scientific advance. Research facilities have been greatly expanded, the quality of Soviet scientific training has been improved, and the number of graduates in scientific and technical subjects has sharply increased. The rate of advance of Soviet science appears to be increasing, and the current Seven-Year Plan, which relies heavily on scientific and technological achievements, will provide additional impetus. Thus, significant Soviet advances in science and technology are likely

to occur with greater frequency than in the past, and over the next several years, the USSR may achieve world leadership in some additional scientific areas.

77. In the basic sciences, Soviet capabilities are generally good, particularly in the theoretical aspects. Soviet science shows particular strength in physics, mathematics, and the geophysical sciences, and it is in these fields that major Soviet advances are most likely to occur. The USSR generally lags behind the West in chemistry, biology, agricultural sciences, and some aspects of medical research. However, during the next several years there will probably be a major expansion of all chemical research with particular emphasis in fields where the West now leads, such as plastics, petrochemicals, and synthetic fibers. Soviet medical research and clinical medicine will probably be raised to a level approaching Western standards, and research in the biological and agricultural sciences is also expected to improve appreciably.

78. The USSR is continuing its strong emphasis on military research and development. The high priority given to missile and space programs has assured the availability to these programs of capable personnel, high quality facilities, and strong support from associated fields. Rapid advances, including the achievement of manned space flight within the next few years, are likely. Development of ground, air, and naval weapons continues, although lack of sufficient experimental facilities has hampered aeronautical development to some extent and may continue to do so in the future. In general, Soviet electronics research and development has been outstanding, and notable advances in military electronics can be expected. The USSR is believed to have comprehensive chemical and biological warfare research programs, and future research probably will emphasize new and improved agents, means for dissemination, and equipment for defense.

79. Soviet industry is characterized by marked qualitative unevenness in technological practices between industrial sectors and even within certain sectors generally well developed. In heavy industry, such as steel making, techniques and equipment often compare favorably with those used in the West. However, industrial practices generally are inferior and sometimes even crude by Western standards. Industrial applications of automation techniques appear to have been limited to selected pilot and experimental installations, but the Seven-Year Plan calls for such techniques to be introduced on a much wider basis. Important advances in the average level of Soviet industrial technology will continue. However, in spite of the effort and resources being devoted to this task, the magnitude of the problem is so great that Soviet industrial technology will remain generally behind that of the West well beyond the period of this estimate.

#### Political Implications

80. Achievements in science and technology have greatly enhanced Soviet prestige. The earth satellites and the moon rockets in particular have provided impressive evidence of the present high level of Soviet scientific capability, and have bolstered Soviet claims of successes in other fields, particularly in weapons development. By concentrating efforts and resources, the USSR probably will achieve during the next few years a number of additional "firsts" in prestige fields. In the immediate future, these are most likely to occur in the Soviet space program, but the quality and intensity of Soviet research on such problems as controlled thermonuclear reactions and direct conversion of heat to electricity may produce spectacular results in other scientific fields. In addition to their economic and military implications, such successes would have considerable psychological and political effect throughout the world.

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#### IV. DEVELOPMENTS IN SOVIET MILITARY POLICY "

##### BASIC SOVIET IDEAS CONCERNING THE ROLE OF MILITARY POWER

81. Soviet ideas about military policy are conditioned, not only by the facts of world power relations, but also, like every other aspect of policy, by the Marxist-Leninist ideological heritage. Soviet ideas about the role of military power as an instrument of Soviet policy have been little affected by the profound change in the military position and relative power of the USSR over the last two decades. The problem of understanding Soviet military policy, and of estimating the military programs it is likely to produce, begins with these basic ideas, which differ in many important respects from those held in the West.

82. For the Communists, it is an unquestioned article of faith that there is an ineradicable struggle between their social system and that of the non-Communist world. While they regard this as fundamentally an ideological struggle on class lines rather than a military one between states, they have always believed that there was a continuing danger that the capitalist states would deliberately attack the USSR in order to destroy the Communist system, or that they would do so as a last resort in face of the disintegration of their own system. Consequently, the building of forces adequate to deter or deal with Western attack, as well as to insure ultimate victory in the world struggle, has always been a paramount aim of Soviet military policy. Similarly, a main incentive of the sustained and strenuous effort to expand Soviet economic strength has been to provide the basis for military power.

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\* For detailed estimates of the present and prospective strengths and capabilities of Soviet forces, see Annex A and the tables in Annex B.

83. Moreover, the Soviets see other uses for military forces than that of military defense. For them great military power is a symbol and instrument of their total power position. In their central concept of a struggle between social systems, the power wielded by each side takes various forms. It is political, economic, psychological as well as military, and these aspects of the total power position are seen as mutually reinforcing. The Soviets will expect the world to see in the growth of their military power proof of the success and invincibility of their social system. They will expect that their political influence, the number of their adherents in the world, and the effectiveness of their psychological pressures—in short their ability to advance the cause of Communism worldwide—will be enhanced with the increase of their military power. They are also aware that military power can be used not only in combat but also as an instrument of political pressure. Thus so long as the Soviet ideological outlook remains essentially unchanged, the enhancement of military power is likely to remain a primary preoccupation of the Soviet regime.

84. It has always been the Soviet claim that Communist armed forces are not and cannot be used for military conquest. War for conquest is said to be characteristic of pre-Communist social orders, one of the evils which their revolutionary movement aimed to eliminate. Moreover, the Communists argue that they have no interest in military conquest because they believe that the process of social change in history does not result from such a means but only from revolutionary class struggle. Whether or not these propositions would have any effect in determining the magnitude of the military power the USSR might seek to acquire or the way in which it would use superior military power is a question of considerable interest at present when

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Soviet resources to support great military power are continuing to expand rapidly.

85. The alleged ideological renunciation of military conquest cannot be counted upon to restrain the Soviet leaders from use of superior armed forces to expand Communist control in particular areas where this seems feasible to them. There is a sophistry in Communist ideological contention which permits any aggressive use of Soviet armed forces, as against Finland and Poland in 1939-1940 and later in Eastern Europe, to be described as "just" or "liberating" war. However, there is an ideological inhibition attached to sudden military assaults aimed at outright conquest and unaccompanied by appropriate political conditions.

86. The fact that the central meaning of history is seen by the Communists as a long-term struggle for social revolution rather than as a contest of military power between states has certain further implications for the Soviet approach to military policy. Military power in the Soviet view should not be used recklessly to the hazard of the main power centers of Communism but should be kept intact and enlarged as a key element of the total power position of the Communist world. As that total power position grows it will be an encouragement and guarantee of the success of revolutionary forces in the non-Communist states. In particular, the "imperialists" will be deterred from resorting to force to check the forward movement of the "masses" toward Communism. To be sure, Communist armed forces might in certain circumstances be used directly to assist a Communist party to accomplish its revolutionary mission and seize power. But this should not be done in a manner to jeopardize the security of the main centers of Communist power. For these reasons, Soviet policy prefers, if military force is to be used, to employ non-Soviet Communist forces in limited actions, in politically favorable circumstances.

87. Communists think of the revolutionary struggle for power not only as long-term, but also as continuous. It is not interrupted by formal peace between states or by periods when "peaceful coexistence" is emphasized.

But the Communists recognize that political warfare always carries with it the possibility of resort to force by the enemy or, alternatively, opportunities for the successful use of force by themselves. Communist armed forces must therefore maintain a high level of readiness and must be prepared to operate on any scale, local, limited, or general. The Soviet leaders, guided by political considerations and revolutionary aims, wish to have maximum flexibility to employ whatever level of violence a tactical situation might dictate.

88. In sum, the building of military power has had and will continue to have very high priority in the USSR. The Soviet armed forces are intended in the first instance to deter attack on the USSR and other Communist states, and to insure survival of Communist power should such an attack occur. Beyond this, they are regarded as a key element in Communism's world power position, buttressing Soviet political, economic, and psychological influence and facilitating the struggle of Communist revolutionary forces for power in non-Communist countries. They may be used as opportunity offers to assist Communist seizures of power, though they are probably not intended for any consistent and far-reaching policy of outright military conquest.<sup>7</sup>

#### EVOLUTION IN THE STRUCTURE OF SOVIET FORCES

89. The structure of Soviet forces has undergone a striking change since 1945. Previously these forces were designed primarily to engage in large-scale land battles in Eurasia, the principal threat to Soviet security then being con-

<sup>7</sup> The Assistant Chief of Staff, Intelligence, USAF, does not agree with the judgment expressed in this sentence, specifically that military power is "probably not intended for any consistent and far-reaching policy of outright military conquest." He feels that the Soviets' effort to achieve and maintain substantial military forces, especially their ICBM program as estimated by the Assistant Chief of Staff, Intelligence, USAF, in NIE 11-8-59, "Soviet Long-Range Attack Capabilities through 1964," indicates that Soviet forces are as likely to be intended for a "consistent and far-reaching policy of outright military conquest" as for any other purpose.

sidered to arise from the aggressive intentions and military power of Germany and Japan. With the defeat of these two enemies Soviet policy assumed, as on ideological grounds it had to, that the USSR's World War II allies, the surviving capitalist powers, would necessarily be the enemies of the postwar period. However, the military threat posed by the Western allies, in particular the US, was of a different kind and imposed new military requirements on the Soviet armed forces. The Soviet leaders undertook immediately in the postwar period, despite the formidable tasks of recovery and reconstruction, to acquire new weapons and to adapt their forces to meet the new requirements.

90. In the immediate postwar years the Soviets relied upon their massive land forces stationed in the center of Europe not only to support Soviet political objectives, but also to deter the West from resort to military action. In view of the demobilization of Western armies, the Soviets counted on the capability of these forces to seize Western Europe and hold it hostage as an offset to US strategic airpower. As the postwar period advanced, the Soviets pushed ahead to acquire in addition weapons and forces capable of directly countering the US threat. They made a major effort to get nuclear weapons and a bomber force capable of striking at the power centers of the potential enemies. Concurrently, great effort went into the buildup of an air defense system to counter the principal threat posed by the enemy, his strategic air capabilities. Finally, a great effort was made to build naval forces to cope with an enemy who would be dependent on control of the seas in order to bring his full forces to bear against the USSR in Eurasia.

91. The Soviets also began early in the postwar period the development of an entirely new weapons system, that of long-range missiles. This was done in part because Soviet technology was prepared, especially with the acquisition of German work and German specialists, to move ahead successfully in this field. In addition, Soviet development of heavy bomber aircraft was not strikingly successful. But more important, the relative geographical dispositions, that is, US possession of close-in bases around the periphery of

the USSR and Soviet lack of equivalent forward bases, together with the probable development of effective US air defense, probably made competition in bomber forces seem unequal to the Soviets. They saw in long-range missiles a weapon which would enable them to overcome their inferiority to the US in strategic striking power.

#### SOVIET VIEWS ON THE CURRENT BALANCE OF MILITARY POWER AND ON STRATEGY

92. The acquisition of intercontinental missile capabilities is having a profound impact on the Soviet estimate of the balance of military power. The Soviet leaders regard this development as symbolizing the achievement of a new relationship of power in which the "imperialists" will be deterred from attempting to destroy their regime by force. This marks in their view a great historic divide and is the reason for their solemn declaration that "capitalist encirclement" has ended. Nevertheless, they also recognize that at present their capabilities are insufficient to insure that if they were to attack the US they could prevent a devastating retaliatory blow. Therefore, the Soviets almost certainly consider that both sides are now deterred from deliberately initiating an all-out nuclear war or from reacting to any crisis in a manner which would gravely risk such a war unless vital national interests were considered to be in jeopardy. However, mutual deterrence against strategic nuclear attack is not seen as a stalemate, but rather as an opportunity to press psychological and political forms of attack more vigorously, and possibly even to engage in some limited forms of military action.<sup>a</sup>

<sup>a</sup> The Assistant Chief of Staff, Intelligence, USAF, would revise the last two sentences of the paragraph as follows:

Therefore, the Soviets almost certainly consider that both sides *eventually could be* deterred from deliberately initiating an all-out nuclear war or from reacting to any crisis in a manner which would gravely risk such a war unless vital national interests were considered to be in jeopardy. *Accordingly if mutual deterrence against strategic nuclear attack eventuates, the Soviets will probably see it as an opportunity to push psychological and political forms of attack more vigorously, and possibly even to engage in some limited forms of military action.*

93. In this situation, Soviet strategic thinking now assumes that while general war is unlikely, it cannot be entirely excluded as the outcome of a local crisis in which both sides became progressively committed or in which a miscalculation by either side occurred. In view of this contingency and because of the great advantage gained by the side which initiated strategic nuclear attack, Soviet strategists a few years ago developed a concept of pre-emptive attack, that is, that an attempt should be made to anticipate with a first assault an enemy who is himself preparing imminently to attack.

94. We believe that Soviet forces are now prepared to act on such a concept, and that the Soviet leaders would in fact order a pre-emptive attack if they were convinced that the US was irrevocably committed to initiation of all-out nuclear war. Such an attack would employ available long-range aircraft and missiles with the objective of destroying as much as possible of Western nuclear retaliatory forces prior to launch. The results achieved by such an attack would depend greatly on the degree of surprise attained, and the increased emphasis given by Soviet strategists to the surprise factor in recent years shows that they are fully aware of this. They do not appear to believe, however, that surprise alone would be the decisive factor in determining the outcome of a war between the two great nuclear powers. Its significance in their view is that while it gives an important advantage to the side achieving it, other factors such as capacity for recovery, ability to occupy territory, and residual political and economic strength would contribute vitally to the final outcome.

95. Soviet strategic thinking also envisages that Soviet forces might be used in limited or local actions. The structure of these forces, marked by the retention of large conventional elements, would permit their use on either a small or large scale for nonnuclear actions in Eurasia. Given the existence of these forces, the Soviets probably believe that as Soviet strategic nuclear capabilities grow the West will be increasingly restrained from interventions to prevent Communist gains. Situations may therefore arise in which the USSR would feel more willing than hitherto to en-

gage in local warfare, although it would probably prefer on political and military grounds to limit itself to logistic and other support of non-Soviet forces. Any such use of Soviet forces would probably be limited to a scale sufficient only to achieve local political objectives with minimal risk of expanding the conflict. They would be particularly cautious about situations involving a possibility of serious clashes with US forces. The Soviet leaders' willingness to engage in limited war will depend upon their judgment in particular cases on the extent to which the enemy is able and willing to bring his forces to bear locally, and on the chances of the situation developing into general war.

96. Soviet leaders, including Khrushchev himself, have publicly contended that conflicts could not be kept limited if nuclear weapons were used in them. The Soviets probably believe that in limited conflicts their forces will ordinarily enjoy 'superiority on a nonnuclear basis. Hence, they will probably continue to use maximum political measures to inhibit in advance the use of nuclear weapons in such conflicts. Moreover, at the outset of any limited conflict, the Soviets would probably make a considerable effort to avoid being the first to use nuclear weapons. However, they would respond to Western use of nuclear weapons, if they considered it militarily necessary, by themselves using nuclear weapons on any scale indicated by the importance to them of the political and other factors involved in the particular situation.

#### PROBABLE DEVELOPMENTS IN THE STRUCTURE OF SOVIET FORCES

#### Capabilities for Strategic Attack"

97. The most important question concerning the future development of Soviet military

"For a detailed treatment of the considerations underlying the judgments made in paragraphs 17 and 18, see NIE 11-8-59, "Soviet Capabilities for Strategic Attack Through Mid-1964," dated 9 February 1960. In accordance with his dissents to relevant portions of that paper, the Assistant Chief of Staff, Intelligence, USAF, dissents from these two paragraphs. See his statement printed as a footnote to paragraph 18, Annex A.



power is what policy the USSR will follow in developing its long-range ballistic missile capabilities. The key issue here is: Will the Soviets believe that they can acquire capabilities which would permit them to plan attacks on Western retaliatory forces with a degree and certainty of success which would insure that the USSR could win a general war without itself incurring damage it would be unwilling to accept? There is no evidence at present that the USSR has set on foot programs to achieve such decisive capabilities. Neither do we believe, in the light of our estimate of the large size of a missile force required to effect such a plan, that the Soviet leaders will in fact attempt it. Apart from the Soviet view that political-revolutionary forces are predominant in determining the outcome of the world struggle, the main factors arguing against a Soviet attempt to acquire such decisive missile capabilities are: (a) inability to insure that programs laid down several years in advance to build such forces would actually achieve their object in view of the inevitable uncertainty concerning the development of enemy countercapabilities in the interim; (b) the possibility that the enemy would detect an effort on such a scale and either take effective countermeasures or resort to preventive attack; (c) the formidable economic costs of such a program, which would cause disruption of key economic plans.

98. We believe, nevertheless, that the Soviets will build a substantial long-range missile force. They will almost certainly wish to have a high degree of deterrence, and beyond this, should deterrence fail, a force offering as much promise of success for a pre-emptive attack, or indeed for a retaliatory attack, as can be bought within acceptable margins of economic cost. Also, and again consistent with acceptable cost, the Soviets will probably build up their planned force rapidly in order to capitalize through political exploitation on their lead over the West in missile development. On the basis of these criteria, we estimate that the present ICBM program will provide in mid-1961 a number of missiles on

launcher on the order of 140 to 200.<sup>100</sup> More tentatively, because of technical and political factors which may affect Soviet plans in the interim, we estimate that Soviet ICBMs on launcher are likely to number in the range of 250-350 in mid-1962 and 350-450 in mid-1963. In addition, Soviet strategic attack capabilities during the period of this estimate will include a force of medium-range missiles, the bombers in Long Range Aviation (many equipped with air-to-surface missiles), and a growing number of missile-launching submarines.

### Composition and Size of Other Forces

99. Despite the effort which we estimate that the USSR will make to build long-range attack forces, it will almost certainly not do so at the cost of sacrificing its other military capabilities. The Soviets will not wish to come to depend too heavily on nuclear forces. Their military policy will almost certainly continue to rest on their concept of an appropriate balance between conventional and nuclear capabilities. They apparently continue to believe that a general war launched with strategic nuclear attacks would turn into a protracted conflict in which other forces would be needed on a large scale. But more important is their belief that their military policy requires a range of capabilities permitting flexibility in the choice of means and the scale of operations in accordance with the political objectives sought in a particular area. Soviet military policy thus aims to have maximum freedom of action so that the USSR can itself determine the scale of military involvement appropriate to any situation. The Soviet leaders probably believe that such capabilities become even more important under mutual deterrence from general war when pressure and threat, maneuvers and coups, even undeclared local wars may be undertaken with

<sup>100</sup> The views of the members of the USIB vary as to the most probable number within this range. See the statement of their separate views printed as Note A on page 8.

greater freedom and pushed further than in the past.<sup>11</sup>

100. We believe that the substantial reductions in manpower strength of the armed forces which Khrushchev announced in January 1960 will probably be carried out. The reductions would release badly needed manpower to assist in meeting economic programs. Due to the low wartime birth rates, the number of men reaching military age annually over the next few years will decline and the manpower needs of industry would have been acutely felt if the 1959 force levels had been maintained. (See Chapter II, paragraphs 42-43.) Moreover, savings arising from reductions in force strength will largely offset increases in other military expenditures. The Soviets have sought to extract propaganda advantages from their announcement of future force reductions and disclosure of actual manpower strength, in support of the current foreign policy theme of relaxation of tensions. Nevertheless, we believe that the Soviets will almost certainly continue to maintain substantial ground, air, and naval forces, including various missile units. To the maximum extent possible, these forces will be dual purpose, capable of employing nuclear or non-nuclear weapons, as circumstances dictate.

<sup>11</sup> The Director for Intelligence, The Joint Staff, and the Assistant to the Secretary of Defense, Special Operations, do not concur in the estimate that the USSR probably believes that it can undertake the actions described with greater freedom and can push them further than in the past. Such a Soviet judgment would, in the view of the above members of the USIB, necessarily involve an estimate by the Kremlin that Western—particularly the United States—response to their pressures and probings would lack the vigor necessary to dissuade them. They do not believe that the Soviets will make such an estimate.

The Assistant Chief of Staff, Intelligence, USAF, would revise the sentence in question as follows: The Soviet leaders probably believe that if *mutual deterrence from general war eventuates*, such capabilities could become even more important, when pressure and threat, maneuvers and coups, even undeclared local wars may be undertaken with greater freedom and pushed further than in the past.

## Air Defense Forces

101. Despite the prospect that the ballistic missile will ultimately become the principal Western strategic attack weapon, Soviet planning evidently assumes that bomber aircraft will remain a substantial threat at least through the period of this estimate. New surface-to-air missile systems are being installed on a considerable scale for the defense of vital areas, and fighter forces will probably be modernized and reduced. These weapons systems already pose a severe threat to present types of Western bombers, but their full capabilities will not be realized until the USSR acquires additional control and warning systems to improve reaction times. Over the next several years, the main Soviet efforts to improve air defense will probably be in the fields of air defense missiles and control systems. Also, looking further ahead, the Soviets will almost certainly be making a major developmental effort in antimissile defense over the next five years. Some antimissile capabilities will probably appear by the end of the period or soon thereafter.

## Ground Forces

102. Programs of modernization will continue to go forward in the Soviet ground forces, along with reductions in manpower. The steps being taken are aimed primarily at achieving greater mobility and at developing special capabilities and tactics for ground combat under conditions of nuclear warfare. The most important equipment changes to achieve these purposes involve the widespread introduction into the forces of missiles, and the wider use of armored and amphibious personnel and weapons carriers. In addition, there will probably be a major improvement in airlift capability with the introduction of new transports and helicopters now entering production. The major expansion of the civil air transport fleet planned over the next several years will provide additional aircraft which could be used for military airlift if desired.

## Naval Forces

103. The Soviets apparently consider that the principal missions of their naval and naval air forces are to assist in countering the Western strategic air threat (especially that originating at sea), to interdict Western sea lines of supply, and to undertake defense of sea approaches. In addition, as more missile-launching submarines become available the navy will participate increasingly in the strategic attack mission. The Soviets continue to believe that a large submarine force should be the principal element of a navy designed, in the USSR's particular geographical circumstances, to meet these requirements. They will probably therefore continue to give priority to submarine development. Reductions in the surface force seem likely, although some units will be modernized, in particular by their adaptation to missile use. The introduction of missile-launching ships will probably continue. Another major aspect of Soviet naval development during the period will be emphasis on antisubmarine warfare, especially to counter the strategic threat posed by US missile-launching submarines.

## MILITARY POLICY TOWARD OTHER BLOC STATES

104. The Soviets will almost certainly continue to regard their military relations with the East European Satellites under the Warsaw Pact as an important element of their total strategic position. In general they consider that the existence of these forces helps to maintain their hegemony in Eastern Europe. In some circumstances the Satellite forces would probably contribute to Bloc military capabilities in war, at least initially, but as a general rule we believe that the Soviets would not count on a major Satellite contribution. Likewise, we believe the Satellite armed forces would maintain internal order and stability against small-scale or sporadic popular uprisings; against widespread popular revolt, they could probably not be relied upon. The size of Satellite forces will probably remain stabilized at about their present levels, and the Soviets will continue to supply substantial

military aid for these forces in the form of weapons and equipment and training assistance. The Soviets would almost certainly be unwilling to provide them with nuclear weapons.

105. The Soviets evidently regard the stationing of Soviet forces in the Satellites as valuable to the defense of their own territory. At the same time, the presence of large forces in a position to assault Western Europe directly and with little warning is probably conceived as an important ingredient in deterrence of the West, especially against possible Western actions to alter the political situation in Central and Eastern Europe. Two major developments of the last year have been the appearance in East Germany of surface-to-air missile sites and evidence of deployment of 700-mile surface-to-surface missiles, also in East Germany. Soviet combat forces have now been withdrawn from Rumania. Although further reductions of Soviet forces in Eastern Europe are likely, substantial forces will almost certainly remain in East Germany during the next few years.

106. From a military point of view the USSR's alliance with Communist China has important advantages. The very large Chinese forces add to the overall military strength of the Bloc and pose a threat, especially in contiguous areas. At the same time, they impose constraints on Western policy in Asia. Chinese territory is also useful for extension of Soviet air defense. The character of Soviet military aid to China has been changing as the Chinese, with Soviet economic help, have become capable of producing a wider range of basic military equipment. The Chinese will continue for some time, however, to depend heavily on the USSR for complex and advanced types of military equipment. The USSR will probably begin to supply jet medium bombers, advanced fighters and guided missiles for air defense, and possibly short-range surface-to-surface missiles. We believe, however, that the USSR will not wish to provide nuclear weapons and this may be a source of serious tension in the alliance.

## V. SOVIET RELATIONS WITH OTHER COMMUNIST STATES

107. Relations with other Communist states probably continue to be one of the major policy concerns of the Soviet rulers. The line laid down on the USSR's "leading role" in the Bloc at the Moscow conference of Communist parties in November 1957 remains officially in force; in most respects Soviet authority in political and ideological questions appears more firmly established than at any time since the disruptive events of 1956. In Eastern Europe the USSR has felt sufficiently confident of the control of the Moscow-oriented regimes to urge them once again to press forward in imitation of the Soviet model of social and economic development. However, there are signs that Communist China is becoming less disposed to accept Soviet guidance in domestic and foreign policy, even though it has outwardly complied on a number of disputed issues in recent months. We believe that the problem of intra-Bloc harmony is far from being resolved. Disharmony is likely to arise repeatedly with the appearance of new issues, and in the long run will probably be one of the more critical problems with which the Soviet leaders will have to cope.

108. One disruptive factor, the heretical ideological influence of Yugoslavia within the Bloc, has continued to decline in importance. The "antirevisionist" campaign directed against Yugoslavia from the spring of 1958 has had the effect of isolating Yugoslavia ideologically from the Communist movement and denying influence to those in the Satellite parties who may have been attracted by Yugoslavia's deviationist brand of Marxism-Leninism. Moscow has felt sure enough of its success in this to entertain normalization of relations with Yugoslavia on a state-to-state basis. A new reconciliation on an ideological basis is unlikely to be attempted for the present, or to succeed if attempted. Nevertheless, the Soviets must regard this as a desirable ob-

jective though they would be unwilling to make many concessions to obtain it. One of the strengths of their doctrine is its claim to be a scientific creed of universal authority, a claim which the existence of Yugoslavia refutes. Yugoslavia's efforts to spread in underdeveloped countries its views opposing Soviet hegemony must already be a matter of concern to the Soviets.

### Soviet-Satellite Relations

109. Since the events of 1956, Moscow has achieved considerable success in reconsolidating the Communist control structure in Eastern Europe. In the past year, the Soviet leaders felt that the time had come to launch a new phase, a return to more intensive effort in the "building of socialism" on the Soviet model. These accelerated programs are being undertaken in conjunction with the 21st Soviet Party Congress' proclamation of the USSR's entry into a period of the "accelerated construction of communism."

110. The new phase is being pursued on several levels. Internally, the Satellite programs for stepped-up socialization in the next few years include long-range plans aimed at reducing the antipathy of the Satellite populations to Communist objectives—through increased political indoctrination, new educational programs, and limited efforts to improve the position of the consumer. Simultaneously, the completion of agricultural collectivization is to be sought in all the Satellites except Poland, and party controls are to be enhanced as in the USSR. Moscow's plans apparently entail the strengthening of certain institutional forms, such as the Council of Economic Mutual Aid (CEMA), which are intended in the long run to make the Satellites more interdependent, and at the same time dependent as a group on the Soviet Union. As a fur-

ther guarantee of the stability of the regimes, Moscow continues its efforts to obtain Western acceptance of the present political arrangements in Eastern Europe as final and legitimate.

111. Despite some success in narrowing the limits of divergence within the European Satellites, Moscow continues to be embarrassed there by ideological difficulties in its relations with Communist China, as well as by continued anomalies of the domestic picture in Poland. However, Khrushchev appears unwilling to return to discredited Stalinist practices or methods of control in the Satellites, and thus continues to allow considerable leeway in internal policy. In the past year this could be seen in the considerable disparity in the Satellites between Bulgaria's "great leap forward" and Poland's cautious and deliberate "road to socialism." Khrushchev probably believes that an attempt to insist upon too close a uniformity would again invoke more serious dangers than those arising from the present degree of divergence. He thus seems to have consciously adopted a differentiated policy toward the individual Satellite states. They will be encouraged to follow a course desired by the Soviets, that is, to ape the Soviet model, but the views of the Satellite leaders as to the appropriate pace, as to what is politically feasible or not feasible, will be given considerable weight. There are probably two conditions, however, which Khrushchev considers it mandatory for the Satellites to meet: whatever they do in practice, they must not openly challenge Soviet leadership of the Bloc and ideological authority. And, on all international questions involving the Bloc's relations with the non-Communist world, they must closely follow the Soviet lead.

112. These latter criteria are met even in Poland which continues to offer the greatest challenge to the Soviet attempt to impose uniformity and control in Eastern Europe. Khrushchev seems convinced that Gomulka's slower road to socialism is the best course available, given the strength of anti-Communist

and anti-Soviet forces in the country. Gomulka has been given a clear and public endorsement by the Soviet leader, who also sided firmly against the Polish Stalinists, whom he warned to get behind Gomulka and to stop advocating too close emulation of the Soviet example. Nevertheless, Khrushchev may find in the years to come that Poland's slower progress toward socialism and greater degree of internal freedom will become increasingly disturbing to the other Satellites. Particularly if the other regimes encounter serious difficulties in building socialism, or if Poland's example exercises too great an influence on moderate elements in the other Bloc countries, the differences between Poland's pace and that of the other Bloc countries will probably cause strains in the Polish-Soviet alliance.

113. On the other hand; it is also possible that Polish internal policy will on its own motion develop in a way to diminish the differences between Poland and the other Communist states. There are recent indications that economic failures are leading Gomulka to attempt a tightening of discipline. This attempt, together with declines in some items of consumer supply, especially meat, may give rise to a popular morale problem and might even lead to disorders among urban workers. In order to prevent serious turmoil from developing, the Soviets may decide to supply economic aid to alleviate the worst shortages. Over the longer run, the primary Soviet objective will probably be to maintain the stability of the Communist regime in Poland, while at the same time applying mild pressures to reduce the gap between Polish practice and that of the other Satellites.

114. East Germany continues to be of critical importance to the Soviet strategic position in Eastern Europe. Despite a strengthening of its internal political and economic position in the past year, the regime remains the object of popular hostility, as shown by occasional overt manifestations of opposition, as well as by the diminished but unbroken exodus, especially of intellectuals and skilled

technicians. Although the Soviets have made every effort to reinforce Ulbricht's authority as Party leader and factional opposition has collapsed, the regime nevertheless continues to depend for its existence on the presence of Soviet forces. Its internal instability, in fact, was almost certainly one of the main factors behind last year's Soviet initiative on Berlin. The Soviets probably believe that elimination of the political threat posed by West Berlin, together with some form of Western recognition of East Germany, would greatly strengthen the latter's stability. This would also give the USSR greater freedom to reduce its forces in East Germany if Soviet leaders thought it desirable. However, should the Soviet attempt to alter the status of West Berlin seem to have been clearly rebuffed, the present problems of the regime may be magnified.

115. The current tendency in Eastern Europe generally is toward a stabilization and consolidation of Communist rule. Major upheavals like the Hungarian revolt or the near defection of Poland in 1956 are unlikely in the near future, in view of the present relative stability of the regimes as well as their presently more cautious approach to internal policy. Events of recent months indicate that, when the accelerated internal programs cause difficulties, the regimes will modify their policies at least temporarily so as to ease the pressure on the populace. However, the basic factors which led to the unrest of 1956—popular resentment of Soviet domination, antipathy toward Communism, and depressed living standards—continue to exist. A recurrence of an attempted national defection or revolt could take place, sometime during the coming five years, given the proper circumstances. If vacillation or uncertainty appeared in Soviet policies toward Eastern Europe as a consequence, for example, of leadership instability in the USSR or serious Sino-Soviet disagreements, it is possible that confusion within one or another Satellite party would combine with newly emboldened popular opposition to produce another challenge to Communist power. Nevertheless, the general outlook is for con-

tinued maintenance of Soviet hegemony in Eastern Europe as a whole for the period of this estimate.

### Sino-Soviet Relations

116. The Soviet Union and Communist China remain firmly allied against the West, and this will almost certainly continue for the period of this estimate. Probably the most important factor which cements the alliance is mutual advantage: China obtains essential political, military and economic support; the USSR has the benefit of China's military and economic potential, which magnifies the world power position of the Communist Bloc, and also the political value of a strong Communist state in Asia. Unity is also promoted by their acknowledgment of a common enemy, the capitalist world, and by a common body of doctrine alleged to be authoritative for both partners. Moreover, the Soviet Union and China are aware of the disastrous consequences which would follow a split in the alliance, both to their international position and to the internal stability of their regimes.

117. On the other hand, there are several factors which are likely over a period of time to make the relationship an increasingly complicated and difficult one. China's immense size as a nation and the fact that the Chinese Communist regime came to power largely without Soviet help obliged Moscow from the outset to concede Peiping a unique degree of independence within the Bloc. Moreover, the Chinese are applying Communist doctrine, which the parties agree is a universal formula for social revolution, in an environment wholly unlike that in which the Soviet system was developed. Having begun their revolution by attempting to adapt the Soviet model to their own conditions, the Chinese Communists have tended increasingly to wrench it out of shape, thus inevitably presenting an ideological challenge to the USSR. Further, given China's potential, it must loom as an eventual competitor to Soviet power, first within the Bloc and the Communist movement, and perhaps ultimately even in a geopolitical sense. Added to these considerations is the characteristic Chinese pride and sensitivity which only

deepens the cultural gulf already existing between the two societies. This psychological element probably inhibits any real intimacy between the two ruling groups despite the formal front of harmony which is maintained.

118. Against this background, the effects of the sharp difference in the phase and pace of economic and social development in the two countries have emerged more clearly. In the already highly industrialized USSR, able to ease internal pressures and to take consumer welfare increasingly into account, a less doctrinaire mood and a more pragmatic approach to policy have developed. In agrarian China, however, there is a feverish drive for economic development and social transformation which promotes doctrinal extremism and a tense internal atmosphere. The Chinese also tend to adopt a more actively hostile attitude toward the non-Communist world. They imply that the Soviets underestimate the rate of decline of the "imperialist camp." In the past year, moreover, the Chinese have been striving for a greater voice and role in the revolutionary struggle in the underdeveloped areas of Asia, Africa, and Latin America. In general they appear to favor a more militant, revolutionary approach by local Communists than do their Soviet counterparts, and thereby to imply that their own revolutionary experience is more relevant to such areas.

119. More immediate, however, have been the frictions emerging as a result of China's internal policies, which have included tendencies clearly departing from the Soviet pattern. The Soviets seem to have regarded the Chinese "commune" as an ill-conceived policy from the outset. But it was the attempt to represent the commune as a Chinese-devised short-cut to communism and a possible model for other Communist countries to follow which drew a rebuff from the Soviets. They evidently regarded the Chinese attitude as a serious challenge to Moscow's ideological authority over the Communist movement. Disagreement over the commune issue still plagues Sino-Soviet relations, and is bound to have some lasting effect on the harmony of the relationship. Beyond the purely ideological issue, it is possible also that the Soviets

consider Chinese internal economic policy to be erratic and unsoundly planned. From the Soviet point of view it is desirable that Chinese economic development go forward successfully, but also that it remain within a doctrinal framework which poses no challenge to the USSR.

120. We also continue to believe that problems arising from China's presumed desire to acquire modern arms, in particular nuclear weapons and missiles, will be, if they are not already, a serious complicating factor in Sino-Soviet relations. The Chinese will surely regard it as a necessary badge of their equality and great power status to acquire such weapons. The Soviets, on the other hand, will almost certainly be reluctant to see the Chinese in possession of these weapons, partly because this would make China too "equal" within the Bloc, and partly because they would fear that China might court unnecessary risks in its policy toward the US. The Soviets are likely, therefore, to delay as long as possible in assisting the Chinese to acquire a nuclear weapons capability. They probably have promised the Chinese nuclear support in case of need, however, and it is possible that they will assist the Chinese in the acquisition of short-range missiles which could be adapted to nuclear use.

121. We believe that frictions over issues like those described above will have an increasing impact on the Sino-Soviet alliance during the period of this estimate. As the power and prestige of Communist China increase, Soviet levers of authority over China will gradually become less effective. Communist China still gives strong public endorsement to Soviet leadership of the Communist movement, but the Chinese have always reserved their right to exercise independent judgment on doctrinal and tactical issues. We believe that China will increasingly exercise this right, not only in domestic affairs, where direct Soviet influence has always been minimal, but in external affairs as well.

122. Thus each party to the Sino-Soviet alliance may come to act more in terms of its view of its own national need and interest.

The two regimes are virtually certain to differ from time to time on questions of international tactics or policy, and on the mode of controlling or influencing Communist parties in non-Communist states. They will probably continue to differ on major questions respecting the correct road to socialism and communism, and insofar as such differences involve a Chinese challenge to Soviet leadership they could be the most critical of all.

This does not mean, however, that an open Sino-Soviet rupture is in sight. Both parties have too much at stake to permit this; neither party is likely to see any feasible alternative to maintaining the connection. They will probably have to make accommodations to each other in many matters, but they will recognize that a firm alliance is vital to both of them in confronting the hostile forces of the non-Communist world.



## VI. SOVIET FOREIGN POLICY

### CURRENT SOVIET VIEW OF THE WORLD SITUATION

123. The world, to the Soviet leaders, is an arena of conflict. In this arena the chief protagonists are themselves, seeking to advance communism throughout the world, and the ruling circles of the "imperialist" powers who seek to maintain the capitalist system and to push back communism. The struggle is pervasive and incessant, and, in the Communists' view, the victory of their cause is foreordained by the inevitable movement of historical forces. They also believe, of course, that it is their own persistent activity which makes this result inevitable.

124. The Soviet leaders draw their appreciation of the relative strengths and weaknesses of each side, and consequently their determination of the most appropriate lines of policy and of tactics, by calculation of the "relation of forces"—political, military, economic—in the world arena. In their view, the relation of forces in the present historical period is characterized by an accelerating shift toward enhancement of the world power position of the Communist Bloc, and a relative decline in the stature and power of the US and other capitalist states. While such a growth in the power position of world Communist forces has always been considered by Marxist-Leninists as inevitable and irrevocable, it is significant that the Soviet leaders now assert that the process has reached the point where major consequences will be manifest on the world scene within the foreseeable future.

125. The development which has had most to do with stimulating this optimistic appraisal of the world situation has been the USSR's successful pioneer achievements with ICBMs and space vehicles. For the Soviet leaders this has been a major turning point, in the

first place because of its military implications. They consider that they are now overcoming the advantage, enjoyed by the US previously during the period of cold war struggle, of possessing a superior intercontinental striking capability. They see the time approaching when, whatever the circumstances surrounding the initiation of war, they will be able to deliver a devastating attack on the US. The consequence, as they see it, is that the US will be increasingly unwilling to run serious risks of general war, except in response to a direct and vital challenge of the first magnitude. This means not only that the security of the USSR and the Bloc is greatly enhanced, but also that US freedom of action is being constricted and Soviet freedom of action enlarged.

126. At the same time, however, the Soviet leaders probably recognize that the freedom of action that they thus expect to acquire will be limited by several factors. In the first place they are evidently fully conscious of the dangers and horrors of nuclear war and mean to avoid any provocation that could bring it about. Despite the increased relative power which they hope to achieve in the next year or so, they are also aware of the danger of presenting the Western Powers with an abrupt challenge of a magnitude which could provoke them into the desperate remedy of general war. Such a challenge might also provoke a military reaction of such a nature as could lead to an uncontrollable chain of events, the end product of which might be general war. Nevertheless, the Soviets apparently expect to be able to draw political profit from their missile advances, even before these are translated into significant military capabilities, by propagating a widespread belief that they have in fact already acquired a significant lead in military power.

127. The USSR's weapons advances and space achievements are also regarded by the Soviet leaders as a major turning point because they see these as symptomatic of other emerging changes favorable to them. They expect their military and scientific achievements to result in broad gains in prestige and popular regard throughout the world. They are further trying to insure that people both in the USSR and abroad will believe that these successes are owing to the superiority of the Soviet system. They expect their superiority to be further demonstrated by the Bloc's gains in economic output. Success in achieving the Seven-Year Plan goals will, they think, not only provide convincing proof to the world of their system's superiority, but also in fact provide further support for their view that the relations of power are shifting in an irrevocable way. They will expect their economic gains of the coming years to enable them still better to carry the burdens of competitive struggle with the West.

128. The Soviet leaders' confidence is further sustained by their belief that the movement of political forces in the world generally is favorable to them. This is especially true in the underdeveloped countries. They see emerging there movements for "national liberation" or for social and economic reform which will be more amenable to their own tutelage and influence than to that of the Western Powers. Ideologically, they consider that such societies can skip the stage of capitalist development under "bourgeois" political domination and move directly into a "progressive" phase in which the Communist model of social change will be their dominant inspiration. Their confidence in such a trend rests on a long-run calculation, and is probably little affected by the setbacks the Communist cause has encountered in various areas in the last year or so. Even in the developed capitalist countries of the West they see, not signs of imminent collapse, but evidence of loss of dynamism which will make these countries increasingly vulnerable to the Communist challenge as the power of the latter grows. Finally, they feel, in spite of continuing difficulties, that political solidarity among Bloc

states and among Communist parties worldwide has improved since 1956; they seem to believe also that the divisive tendencies which appeared in the wake of the de-Stalinization in the USSR have been brought under control.

129. In sum, the Soviet outlook at present seems to be one of unprecedented confidence in the trend of events. This does not mean that the Soviets think that their battles are all won, or that they can afford to relax or to be incautious. They recognize continuing problems, including those concerning the future stability of their Eastern European satellites, their relations with Communist China, and the future of their own internal political and economic development. However, they see present trends on the whole as favorable, even though they expect that these trends will be interrupted by temporary setbacks, and that their full fruition may be a long time in coming. Taking into account both the internal and international aspects of their regime's situation, and especially its present and prospective gains in power, they feel, perhaps for the first time in Soviet history, relatively free of any serious threat. They also believe that possibilities of political gains are opening up which have been closed to them in the past.

#### MAIN EMPHASIS OF SOVIET POLICY IN THE PERIOD 1960-1964

130. The Communists' political philosophy does not permit them to behave merely as passive observers of the historical process. They consider that they are active agents of history and must exploit the course of events so as to hasten the success of their cause. On the basis of their present achievements in enhancing their power and the apparent likelihood of further such gains on their part, they are currently striving for Western recognition of their new position and of the permanence of Communist rule within the Bloc. They want both to reap immediate gains from such recognition, and to promote the broadest and most stable base for further advance. It is impossible to predict exactly how the Soviet leaders may seek to exploit the increments

to their power which they expect to achieve. Soviet action could be significantly influenced by events in fields having nothing to do with the balance of military power. At the same time, however, it is apparent that a shift in the relation of forces of the magnitude that the Soviet leaders apparently envisage as probable would be likely to have a significant influence on Soviet policy in a number of fields. In any case, it seems likely that the Soviet leaders have considered several alternative lines of policy.

### Attitude Toward General War

131. The alternative of deliberate initiation of general war is one which we continue to believe the Soviet leaders will not entertain during the period of this estimate. They show full appreciation of the incalculable disaster that would be visited upon both sides in such a war. Their programs to build greater military power are being pushed vigorously. But they probably do not count upon acquiring, by any particular date, an advantage so decisive as to permit them to launch general war with assurance of success and under conditions which would not gravely menace their regime and society.<sup>12</sup>

132. Moreover, even if the Soviets came to believe that they could win a general war, perhaps at a high but acceptable cost, it would probably not be their preferred course to initiate such a war. Instead, in view of their philosophy about war and politics, their preference would probably be to press home their advantage by political and psychological means, expecting the enemy to recognize his position as hopeless, to shrink from an all-out encounter, and to concede positions which made his eventual submission without war unavoidable. Of course, there could never be assurance that, if the Soviets once gained such

<sup>12</sup> The Assistant Chief of Staff, Intelligence, USAF would revise the last sentence as follows: *While they probably do not count upon acquiring it by any particular date, they are vigorously attempting to acquire an advantage so decisive as to permit them to launch general war with assurance of success and under conditions which would not gravely menace their regime and society.*

a margin of advantage, they would not overplay their hand and take actions which would in fact precipitate general war.

133. Just as we exclude the deliberate initiation of general war from the policy alternatives the Soviets would adopt, we also exclude the witting assumption of serious risks of general war. The Soviet leaders seem well aware of the danger that situations of high risk might lead to general war without either party wishing it, and are likely to make every effort to maintain such control of these situations that the degree of risk does not exceed what they are willing to accept. Nevertheless, with their new sense of increasing relative power, they may be disposed to see less risk arising from particular initiatives of theirs than they would formerly have done. They will be inclined to expect the enemy to realistically draw the consequences from the altered relations of power, and to make appropriate concessions. There was evidently something of this motivation at work in their instigation of the Berlin crisis in November 1958. Thus, even though we believe that the Soviets will not intentionally provoke serious risks of general war, and will probably draw back if they estimate that such risks have developed, we also believe that the chance of their miscalculating risks may increase if they remain convinced that their relative power is growing.

### Some Alternatives for Soviet Policy Short of General War

134. If we eliminate general war or serious risks of such war from the options on which Soviet policy is likely to act, there remains a considerable range within which the main emphasis of that policy might fall. It might involve greater or lesser degrees of pressure, or alternatively of effort to relax tensions. There might be a tendency repeatedly to provoke crisis situations, or there might be serious attempts to eliminate points of friction through negotiation. Variations of emphasis have ample precedent in the history of Soviet policy.

135. The present period is a particularly difficult one in which to forecast the main emphasis of Soviet policy because recent indications have been extremely contradictory. A year

ago the preceding estimate in this series (NIE 11-4-58) referred to the "generally hardening tone" of Soviet foreign policy. This judgment was based on many authoritative utterances of Soviet leaders, public and private, which indicated their intention to act more assertively on the basis of a stronger power position. Soviet behavior had in fact assumed this character in various tense situations in 1957-1958. Then Khrushchev's Berlin ultimatum seemed to manifest Soviet assertive intentions in particularly sharp form. Even though the element of threat was subsequently muted, the Soviets continued to the end to surround the Geneva negotiations on Berlin with a certain atmosphere of tension. However, with the President's invitation to Khrushchev to visit the US, a strikingly new tone, one intended to relax tensions, was adopted, and has since for the most part been sustained. Thus, in the recent past, the contradictory elements of pressure and accommodation, of belligerence and detent, have both appeared in Soviet policy.

136. Reasons can be alleged which might lead the Soviets to want to continue for a prolonged period their present posture of seeking detente. They might believe that a period of peaceful coexistence in a relaxed international atmosphere would be likely to weaken Western resolution to resist the spread of Communist influence and diminish Western determination to maintain an adequate military posture. They might, for example, think the West would be less likely to resist forcibly possible "peaceful" shifts of individual countries from colonial or Western-oriented to neutral status, from neutralism to pro-Soviet alignment, or even to satellite status. Moreover, the Soviet leaders have set themselves a large budget of internal tasks to accomplish in their Seven-Year Plan. Success may depend in some degree on keeping open the channels of trade and technical exchange, together with the possibility of obtaining foreign credits. Emphasizing peace would be popular internally, and while we do not think the regime is under any real pressure to conform to popular expectations, the habit of courting popularity, which Khrushchev has sponsored, may become increasingly difficult to give up.

137. However, there are also reasons why the Soviet leaders would probably conclude that such a course of prolonged detente would not serve their interests. They are deeply committed to the idea of struggle against the non-Communist world and do not really believe that a lasting accommodation is possible. They will not expect their objectives to be realized unless some ingredient of pressure is included in their dealings with the West. Moreover, they would fear that too much relaxation of tensions could be dangerous to the structure of their power, both within the USSR itself and in the other Bloc states.

138. Alternatively, it is possible that Soviet policy will go over to a consistent line of pressure and belligerence. The Soviet leaders would be inclined fully to exploit what they regard as a favorable shift in the relations of power, and a policy of consistent pressure would at least not be inconsistent with the Communist-world outlook. Such a course might also appeal on the ground that it could result in a major breakthrough in the struggle with the West. For example, winning a decisive victory on a key issue like Berlin might cause a sudden collapse of the Western front, bring about a stampede of waverers and neutralists to the Communist side, and greatly accelerate the eventual triumph of Communist power.

139. Attractive as such prospects might be to the Soviet leaders, there are reasons for believing that they will not follow such a course. For one thing, they are bound to think that, since history is on their side, their relative strength over the long run will improve. One of the cardinal sins in the Leninist lexicon is "adventurism"—acting on an underestimate of the enemy—and so far the Soviet leaders apparently retain great respect for Western power. Moreover, they seem to realize that pressure directed against a key Western position to the point of showdown could bring an unmanageable crisis, and possibly end in general war. Even if it did not, such a policy might draw the Western Powers closer together and stimulate them to undertake intensified military efforts. Moreover, a policy of unremitting pressure would tend to isolate further the Communist movement in the free

world and cause the USSR to lose considerable support in neutralist and uncommitted countries—support on which the Soviet leaders count strongly in their general political strategy.

140. There is another somewhat extreme course of Soviet policy which cannot be entirely excluded, even though we think it unlikely. The Soviet leaders might think that if over the next two years or so the danger of conflict seemed to be declining, the West would push its missile programs less rapidly than it otherwise might, while the Soviet buildup could go forward in secrecy as rapidly as was desired or feasible. Such an interim period of detente would be likely also to see at least a moral disarming of the West, and an increasing reluctance to maintain military forces capable of preventing Communist advances. If then, in some context of provoked crisis over a major issue like Berlin, an unsuspected Soviet array of power were suddenly unveiled, the Soviets might expect to bring off a major Western reversal. The objective would not be war but a decisive blow delivered against Western confidence and unity. The preceding period of emphasis on "peaceful co-existence" would be part of the psychological preparation for the showdown.

141. There are several reasons why such a policy of cunning, intended to accomplish a single grand deception of the enemy, seems to us unlikely. It would culminate in the kind of crisis in which the Soviets could not be sure that the risks would remain controllable by them. They evidently prefer regulated tactics of crisis in which the pressure applied is sufficient to win concessions but not so overwhelming as to lead an enemy to acts of desperation. Of course, if the Soviets held an advantage so decisive that they did not need to fear the hazards of war and could with equanimity view war as the outcome of a crisis, such a course of action would be more plausible. However, as we have indicated earlier, they are unlikely to think that they can win a war within acceptable limits of risk and damage to themselves. Moreover, they would feel that they could profit from a period of

temporary military advantage without having to incur grave risks.

#### Probable Line of Soviet Policy

142. We believe that, over the next five years, neither a policy single-mindedly directed at eliminating East-West tensions nor a policy of pressure with a steadily belligerent tone is likely to be followed by the USSR. We expect to see elements of both pressure and detente combined and varied as tactical advantage may suggest. For the nearer future the present emphasis on negotiation and accommodation seems likely to continue; later the motif of pressure and struggle will probably reappear. Whatever alternation of emphasis may occur, however, the swings are likely to fall within a range which excludes, on the one hand, the deliberate assumption of serious and uncontrollable risks of general war, and, on the other, abandonment of the concept of continuing struggle between two irreconcilable worlds.

143. The reasons for anticipating such a variegated and seemingly inconstant Soviet policy seem to us compelling. In a way, it has been characteristic of the whole history of Communist policy. The Communists are exceedingly preoccupied with the tactics of maneuver and consciously aim at keeping the enemy confused and off balance. This has been particularly true of Khrushchev's regime, which has demonstrated a high degree of tactical flexibility. It is also true that questions of tactics are constantly reappraised in inner party circles and may be the subject of much pulling and hauling. It would not be surprising if the Soviet leadership at present, finding itself in new relations of power for which there are no reliable precedents in Party history, should hesitate or alter its course periodically. Factional politics may have something to do with these shifts—we know that there were sharp differences over foreign policy tactics during the post-Stalin leadership struggles. At present, the Chinese appear to favor harsher tactics than the Soviets. Such tactics may have sympathizers in the CPSU and other Communist parties.

144. Given Khrushchev's unchallenged personal ascendancy, however, his views are likely to be the primary determinant. The strong impress of his personality on Soviet foreign policy tactics has been especially manifest in the last year or two. His attitudes are marked on the one hand by a strong sense of the growth of Soviet power and by a crude and truculent pride in asserting the claims of that power to the world's attention and deference. He has been free in his vigorous use of missile threats. On the other hand, he apparently thinks it possible to win recognition for Soviet views largely through persuasion rather than by force alone. He clearly understands the horrors of nuclear war, and his proclaimed dedication to economic advance appears to be sincere. He probably genuinely believes that the Soviet system can prove its superiority in "peaceful" competition, although he recognizes that Soviet power plays a vital role in this competition. Thus, the contradictory tendencies toward belligerence and accommodation in Soviet policy are probably in some degree a reflection of the attitudes and personality of Khrushchev, and may persist so long as he is the commanding figure on the Soviet scene.

145. The immediate outlook is that the Soviets will continue their present tactics of detente at least through the initial phase of the series of high-level negotiations now in view. A period of partial detente presumably serves a number of useful purposes from Moscow's point of view. First, it provides a suitable framework for an effort to ascertain through negotiation what positions the West is now willing to take in view of increasing Soviet strength and the threatening Soviet behavior over the last year or two. An avowed willingness to reach agreement with the West on a number of issues, including especially disarmament, provides a suitable and superficially alluring framework for possible Western concessions. Secondly, even barring specific agreements with the West, Moscow probably views high-level East-West talks as an acknowledgment by the West of the permanence, legitimacy, and equal status of the

Communist Bloc. Finally, during such a period of detente the Soviets would hope to improve their relative power position still further, since they would expect Western military programs to be carried on with less urgency.

146. Beyond this phase the outlook is less certain. We have emphasized that in the coming period the main influence shaping Soviet policy is likely to be the Soviet leaders' sense of their improved power position relative to that of the West. In another year or two they may feel that their capabilities in long-range missiles have brought them into a period when the relations of military power are the most favorable from their point of view. At some stage, they will almost certainly wish to test the chances of drawing advantage from this situation if it emerges as they expect. We believe that even then they would not wittingly assume serious risks of general war. They will still try to win Western concessions basically through negotiation. But the element of pressure and threat will probably become more pronounced, perhaps much more so, than it is at present. The Soviet leaders may think it possible to undertake more provocative behavior in areas where they are in contention with Western power and influence. In their view, the emerging standoff of intercontinental striking forces marks a stalemate only of general war capabilities. They consider that this situation of mutual deterrence would secure their base and open up new opportunities for advancing Communist power by political, economic, and perhaps even limited military means.

#### POLICY TOWARD NATO AND THE US

147. The main confrontation between the USSR and the Western Powers remains the one in the center of Europe. The Soviets seek on the one hand to frustrate the attempts of the Atlantic Powers to organize and increase their strength in Western Europe, and on the other to consolidate their own hold on Eastern Europe. To facilitate the latter they

try by every means to wring from the Western Powers recognition of the status quo which would concede the legitimacy of the Communist regimes. Beyond shoring up the East European base, however, Germany remains the central focus of Soviet interest because of the crucial increment of power it represents to both sides. The Soviets probably accept that they have no early prospects for extending their influence in West Germany, but they are determined to limit its contribution to Western military power so far as feasible. They will remain even more determined to deny East Germany to the West and to maximize its contribution to the Bloc. The Soviet sponsorship of a peace treaty for the two German states as a step toward reunification is likely to continue to be the official Soviet position. We believe, however, that the Soviets will not undertake any serious negotiations on reunification, but that their policy will rest on acceptance by both sides of the indefinite division of the country.

148. By initiating the Berlin crisis in November 1958, the Soviets undertook, in Communist terms, a probing of the "relation of forces." They probably believed there was some chance that the Western states, recognizing the recent increases in Soviet power, would withdraw from Berlin. At a minimum, the Soviets expected to set in motion developments which would enhance the stability and international status of the East German regime.

149. As of the present, the Soviets have allowed the Berlin crisis to diminish in intensity, and have disavowed any intention of hastening events by undue pressures. Nevertheless, they have not given up their objectives, nor the threat of eventual unilateral action. They clearly seek at least a limited agreement on Berlin which would undercut the Western position in the city and provide a basis for eventually bringing about a Western withdrawal. The value of even a marginal victory on the Berlin issue would still be so great to the Soviets—both in consolidating the Communist regime in East Germany and in discrediting the Western alliance, above all in West Germany—that it seems likely they will

renew their pressure on West Berlin at some moment they deem propitious. We believe that, as long as the Soviets are confident that they can make progress towards their aims in Germany by negotiation and propaganda, they will probably abstain from any major interference with Western access to Berlin and from making a separate peace treaty with East Germany. If they decide that further progress is impossible by comparatively mild methods, they will probably make the separate peace treaty, though they would not necessarily try at the same time to obstruct Western access to Berlin.

150. Apart from pressure on the Berlin issue, Soviet strategy against NATO will probably rely on more generalized lines of attack. In a phase of more aggressive tactics the Soviets will probably again have recourse to missile threats directed against particular members of the alliance who may be willing to have missiles or nuclear weapons stationed on their territory. The Soviets will also hope to find other issues, in Asia, the Middle East, or Africa, where the NATO allies might be divided over the risks to assume in resisting Communist advances. In a phase of milder tactics, they would hope that the resolve of the NATO members to maintain a strong military posture would diminish. They would also hope to exploit differences over the extent to which the alliance can afford to entertain concessions or risk reducing its military strength or altering disposition of forces. In such a phase, the Soviets would try to develop bilateral contacts with individual members of NATO in the hope of engendering suspicion and disagreement. The current approach to the US and the planned visit to France may be partly motivated by this hope. In any case, whatever the tactics employed in any particular phase, the weakening and disruption of NATO will remain a consistent Soviet aim.

151. Under Khrushchev's direction of Soviet policy the impulse to seek contacts at the highest level seems likely to be a regular feature, in part because Khrushchev fancies himself a very persuasive statesman and enjoys confronting his capitalist peers. Bilateral and multilateral summit meetings will prob-

ably be sought in order to preserve and build the atmosphere of detente. If assertive Soviet stands were to create crises, such meetings would be directed more at preserving an authoritative channel for compromise. Meetings held in an atmosphere of crisis will be intended primarily to compel the Western Powers under pressure of world opinion to accede to compromise solutions favored by the Soviets. They will attempt to pose the alternatives either of "peaceful coexistence" on Soviet terms or of tensions bringing a rising danger of nuclear war, hoping by occasional measured reminders of the latter to stimulate acceptance of the former.

### Disarmament

152. In the main, Soviet policy statements on disarmament to date have been aimed at encouraging military retrenchment or political disorientation in the West with minimum Soviet sacrifice. At the same time, the USSR has been prepared to offer minor concessions, including even some limited inspection, in order to achieve agreements from which it expected to gain compensatory advantages. At present, the Soviets probably are prepared to agree on a nuclear test ban provided that the West is willing to reduce still further its requirements for inspection. The Soviets will continue to be extremely cautious about setting precedents on inspection, and probably feel that they do not need to be appreciably more forthcoming in the nuclear test field. If an agreement on tests comes into force, the Soviets will probably next press for nuclear-free zones in various areas, especially in Central Europe.

153. The disarmament theme is likely to be given increased importance in Soviet diplomacy and propaganda in the period ahead. The Soviets have evidently concluded that it is desirable, as the chief manifestation of their current posture, to champion disarmament in broad, simple and sweeping terms which will capture the imagination of many. They recognize that the world wide fear of nuclear war is so intense that great political strength is added to that side in the power struggle which can capture the force of this sentiment, and thus align bodies of opinion with its own cause.

At the least, the USSR will be pictured as willing to play its part in relaxing tensions, while the West will be placed in the position of appearing to seek excuses and to procrastinate when it raises questions of limitations, gradualness, and inspection and verification controls. Beyond this, the Soviets will hope that some Western political groups may identify themselves with such broad disarmament plans, and that some differences concerning them may arise within the Western alliance.

154. Such propaganda aims were almost certainly the main motive for Khrushchev's sweeping proposal for total disarmament delivered at the UN. We do not believe that the Soviets consider total disarmament a realistic possibility or even desirable; they regard their great military strength as an essential ingredient in the challenge they pose to the non-Communist world and the struggle remains for them one of power and not merely of ideas. This does not mean, however, that the USSR will not press other less far-reaching disarmament plans. Regional arms limitation proposals, particularly for Europe, are likely to figure prominently among the "partial" disarmament plans which the Soviet Government will advance at the forthcoming 10-nation disarmament conference. These proposals, which exploit the USSR's geographic situation, are aimed at bringing about a retraction of the US overseas base system, checking the deployment of nuclear and rocket weapons in areas peripheral to the USSR, and inhibiting West German armament.

155. We believe that the Soviets might like to see a freeze or even a cutback in some armaments if this could be done in some way so as to improve their potentialities for long-run economic and political competition without affecting adversely their relative power position. They may also think that some disarmament arrangements can contribute to reducing the risks of war by miscalculation. But the countervailing Soviet aversion to extensive foreign controls and inspection in the USSR will almost certainly exclude anything more than limited agreements. Moreover, while the Soviet economy undoubtedly feels



the pinch of heavy arms expenditures, we do not believe that the Soviet Government will feel obliged for economic reasons to make significant concessions on disarmament.

### POLICY TOWARD UNDERDEVELOPED COUNTRIES

156. In the Soviet view, Asia, Africa, and Latin America—unlike Western Europe and North America—are undergoing profound revolutionary changes, though at different speeds and under widely varying conditions. This situation is seen as offering growing potentialities for replacing Western with Soviet influence, and ultimately for the establishment of communism. The Soviets seek to pose as the disinterested champions of anti-imperialism, and to get a free ride on the crest of the nationalist wave. Moscow has long viewed Asia and the Middle East in this light. More recently, the "national liberation movement" in Africa and the leftist trend in Latin America have been considered to be entering a period of rising ferment, and to offer promising new opportunities for Communist exploitation in the years ahead. It will almost certainly continue through the period of this estimate to be one of the main objectives of Soviet policy to capture a dominant position in underdeveloped areas of the world.

157. At present, the Soviets apparently believe that the political orientation of most newly independent countries of Asia and Africa is still characterized internally by the domination of "bourgeois nationalists" and externally by neutralist tendencies. However, it is clear from recent Soviet pronouncements that they see emerging in some countries of Asia and the Middle East a new stage of internal political developments—a revolutionary turn which will eventually bring Communist-influenced forces to power. The Soviet leaders have always considered their support for the nationalist movements as falling into two phases, the first in which they would support all non-Communist elements in seeking the removal of Western influence, the second in which they would try to bring these movements under Communist control.

158. Moscow's policy toward the underdeveloped countries of Asia, Africa, and Latin America over the period of this estimate will probably keep an uneven balance between its short-range tactics of cooperation with and support for non-Communist neutral governments and its long range goal of bringing these areas under Communist rule. The policy of actively supporting neutral and quasi-neutral governments will probably continue to provide the general framework for Soviet actions toward these countries. This would seem to be particularly true in Africa and Latin America where the Soviets as a rule have yet to establish close ties on a governmental level and where they see a rising tide of nationalism. From time to time, however, the Soviets will probably have to decide whether the prospective gains of a local Communist attempt to seize power in one or another country will justify the risks and difficulties involved. During the period of this estimate there are likely to be cases in which the Soviets will be more disposed than they have recently been to support such militant action by local Communist parties.

159. Soviet trade and aid programs are the economic adjunct to the strategy of penetration in underdeveloped areas. They will probably be continued on at least the scale of recent years, and are likely to be enlarged as Soviet resources grow or as attractive opportunities for political exploitation of trade and aid may appear.

160. It does not seem likely that the Soviets will concentrate their attention on any particular undeveloped region of the world, say the Middle East or Southeast Asia. Instead, they will have an opportunistic policy worldwide, based on the USSR's growing economic and military strength and the Soviet leaders' apparent view that their chances of successfully challenging the West in many areas are improving. At present, Africa and Latin America probably seem accessible only to influence—trade, aid, cultural exchange, propaganda to win support for Communist views on international issues. Local dissatisfactions and discontents may provide an increasingly favorable climate for such Soviet efforts.

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The Middle East and Southeast Asia probably seem more attractive for early subversive action. In cases where there is an internal movement to the Right (as recently in Burma, Thailand, and Indonesia) the Soviets may come to adopt increasingly sharp political and economic pressure to prevent or to limit anti-Communist moves. In general, however, the

Soviets are likely to be cautious about authorizing direct action by local Communists, especially if this is likely to involve the Bloc in military support to such attempts. The Soviet leaders believe that the long-term outlook augurs well for communism in the underdeveloped countries; they will not wish to take undue risks or to incur unnecessary setbacks.

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ANNEX A

SOVIET MILITARY FORCES AND CAPABILITIES

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## ANNEX A<sup>13</sup>

### SOVIET MILITARY FORCES AND CAPABILITIES

1. The Soviets will continue their intensive efforts in weapons research and development with the object of acquiring new systems which, through political and military impact, will shift the world relation of forces to their advantage. In making their decisions, Soviet planners will have to consider such problems as rapid technological change, long lead times, rapid obsolescence, and increasing costs. There will be increasing competition among military requirements of different types, and between military requirements and the demands of highly important nonmilitary programs. In deciding whether to produce complex new weapon systems in quantity, the USSR will probably apply increasingly severe tests as to whether these would add greatly to current capabilities, and as to whether costs were justified by likely periods of use before obsolescence. The history of previous Soviet re-equipment programs indicates that existing assets are not likely to be quickly discarded, but rather maintained until emerging new capabilities have become well established. Nevertheless, we believe that the rate of change in Soviet weapons systems is accelerating, and that the next five years will probably see the appearance of a number of important new developments. Significant new missile capabilities for strategic, air defense, tactical and naval use is the major development which can be foreseen at present.

<sup>13</sup> On 14 January 1960 Khrushchev announced the personnel strength of Soviet armed forces as 3,623,000; we believe this figure should be accepted as substantially correct. He also announced plans for further reductions in strength by 1,200,000 men during the next two years, and for alterations in force structure. In view of these and other indications, we have undertaken to produce, by 1 May 1960, a revised estimate of present and future Soviet force strengths.

### FORCES FOR STRATEGIC ATTACK<sup>14</sup>

2. As a result of the policies of recent years, Soviet long-range attack capabilities are now undergoing a major transition. Current capabilities rest primarily on bombers, all capable of delivering high-yield nuclear bombs and some equipped with air-to-surface missiles. The bomber force is now supplemented by missile-launching submarines and by ground-launched ballistic missiles. We believe that within the next few years ballistic missiles will constitute the main element of the Soviet long-range striking forces.

#### Long Range Aviation

3. Long Range Aviation still consists primarily of medium bombers, best suited for operations against targets in Eurasia and capable of attacking continental US targets only through extensive use of one-way missions. Within the limitations of its bomber aircraft, it is now a proficient force, although its training, basing, and maintenance fall below US standards. Its strength, as of 1 October 1959, was estimated at more than 1,300 bombers, including about 1,100 BADGER medium bombers, and about 120 BISON and BEAR heavy bombers. At that time, the force still included more than 100 obsolete BULL piston medium bombers, but these probably are now completely phased out. Inflight refueling has now been extended to all BISON regiments and about one-half of the BADGER regiments. The USSR has not developed a tanker aircraft; instead BISONs and BADGERS are converted for use as tankers.

<sup>14</sup> For a fuller discussion of this subject see NIE 11-8-59, "Soviet Capabilities for Strategic Attack Through 1964," dated 9 February 1960, TOP SECRET.

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4. A few BADGER units of Long Range Aviation and several naval BADGER units are now equipped with subsonic antiship air-to-surface missiles capable of delivering nuclear or HE warheads to a range of about 55 n.m. The Soviets are also developing and will probably have available in 1961 a supersonic air-to-surface missile with a range of at least 350 n.m., which can be used (with different guidance systems) against land targets or ships at sea. They may also now have in operation an air launched decoy to simulate medium or heavy bombers.
5. Soviet production of bomber aircraft has now virtually ceased, most major plants having been assigned to building transport aircraft. In 1956, at the height of the BADGER re-equipment program, five airframe plants, representing about 35 percent of the capacity of the Soviet aircraft industry, were engaged on long-range bomber production. Currently, only one plant, representing about eight percent of this capacity, is so engaged. The last of three plants which were engaged in producing BADGERS stopped production early in 1959. (Approximately 1,800 BADGERS were produced in all.) BISON production at Moscow/Fili Plant No. 23 has been marked by numerous modifications of the aircraft and by low and uneven production rates. Cumulative BISON production reached about 115 in mid-1959, and during the fall of the year production appears to have been one or two per month. BEAR production ceased in late 1956 after completion of about 60 aircraft.
6. The Soviets apparently decided against a large-scale buildup of heavy bombers as a result of one or more of the following factors: growing confidence in the development of an effective ICBM, dissatisfaction with the performance of BISON and BEAR, and consideration of improvements in North American air defense. Even after a formidable ICBM capability has been established, however, the USSR is likely to retain a manned bomber force, though a smaller one. For some time to come, the bomber will be capable of delivering heavier payloads with greater accuracy than the ICBM. Moreover, manned bombers would provide the Soviets with flexibility and diversification of attack capabilities, and would remain particularly useful for attacks on small hardened targets, damage assessment, and reconnaissance.
7. There is little evidence of Soviet aeronautical research and development programs in the long-range bomber category. In August 1958, a new bomber prototype was observed on the factory airfield at the BISON plant in Moscow. Designated BOUNDER, the aircraft is in the heavy bomber weight class and has a modified delta-wing configuration apparently designed for supersonic flight. However, using conventional fuels, its range potential appears to fall in the medium bomber rather than the heavy bomber class. BOUNDER appears to be in an early stage of development, and evidence is still insufficient to establish its probable development or intended mission. No other large bomber prototype has been positively identified during the past two years, although we do not exclude the possibility that one or more may exist.
8. A significant improvement over present Soviet heavy bombers could be achieved by the development of a nuclear-powered aircraft which would combine virtually unlimited range with a capability for very low altitude penetration. Although there are indications of Soviet interest in nuclear-powered aircraft, no specific Soviet program directed toward the development of such an aircraft has yet been identified. We believe that the Soviets have such a program underway, but believe it unlikely that they will have any nuclear-powered bombers in operational status within the period of this estimate.<sup>15</sup>
9. The BADGER will almost certainly constitute the primary medium bomber threat during the period of this estimate. It is possible

<sup>15</sup> The Assistant Chief of Staff, Intelligence, USAF, believes, in view of the tactical and psychological advantages of a nuclear-powered bomber, the state of Soviet aviation and nuclear technology, and the evident Soviet interest in the development of such an aircraft, that a small number of nuclear bombers may appear in operational status by the end of the period of this estimate.

that the USSR will develop for operational use in 1962-1964 a new medium bomber with supersonic "dash" capabilities and a range approximating that of the BADGER. However, there is no evidence that development of such an aircraft is actually in progress.

10. We estimate that Soviet heavy bomber strength will increase to about 150 in 1961, but that it will gradually decline thereafter to about 120 in mid-1964. This estimate is based on the belief that no more than two BISONs per month will be produced over the next year or so, and that their production will then cease.<sup>16 17</sup> Similarly, BADGER strength probably will remain constant at about 1,000-1,100 aircraft for two or three years, and then decline to about 800 in 1964. If the Soviets decide to introduce a new supersonic "dash" medium bomber into operational units, a few of these might enter service in 1962, building up to perhaps 100 in 1964.<sup>18</sup> In summary, we consider it possible that new aircraft types may be added to the force in small numbers, but we believe that BISONs, BEARs, and BADGERS will continue to constitute the bulk of Long Range Aviation over the next five years.

"The Assistant Chief of Staff, Intelligence, USAF, believes that the Soviets will have a requirement for a larger heavy bomber force during the period of this estimate than that estimated above. He believes that the level and type of activity of the present Soviet heavy bomber force as well as the continued production of BISON bombers indicate a further buildup. He further believes that BISON-type bombers will be produced at the rate of two or more per month over the next few years. In his view, future heavy bomber strength will approximate the following:

Mid- 1960	Mid- 1961	Mid- 1962	Mid- 1963	Mid- 1964
135	150	175	200	200

"The Assistant Chief of Staff for Intelligence, Department of the Army, cannot concur in this estimate of an increase in operational heavy bomber strength, which would reflect an increase of 25 percent within the next year and a half over the current estimated strength of about 120 (paragraph 3). This nonconcurrence is based on the following factors:

a. The trend in annual BISON production has been downward since the peak production year of 1957; the increase to 150 implies a general reversal of this trend.

b. The total of 150 presumably would include the same 40 BEARs now estimated to be in operational units, an aircraft which will then have been out of production for over four years. Thus, the increase estimated has either to assume a still greater BISON production rate or to assume that no BEARs are withdrawn or otherwise go out of service in the next year and a half. The former assumption would suggest an even sharper reversal of observed trends, while the latter assumption is hardly reasonable.

c. The apparent conflict with production trends referred to above could presumably be overcome and the force increased by adding bombers which have been produced but are not now in operational status. However, such action would also reverse a longstanding practice for no apparent reason, unless, contrary to our estimates, the Soviets associate special significance with the date, mid-1961.

d. The apparent emphasis on a buildup of Long Range Aviation heavy bomber strength, implied by a 25 percent increase, conflicts with the judgments (in NIE 11-8-59) that the Soviets do not regard increased numbers of their present bombers as the means of meeting their strategic attack requirements and that they will commence a substantial buildup with ICBMs during the same period.

Based on analysis of the foregoing factors, the Assistant Chief of Staff for Intelligence, Department of the Army, concludes that Soviet heavy bomber strength probably will remain relatively unchanged over the next year and a half, and then with the probable cessation of BISON production and increasing age of the BEAR, will decline rather rapidly. In his view, future heavy bomber strength will approximate the following:

Mid- 1960	Mid- 1961	Mid- 1962	Mid- 1963	Mid- 1964
125	115	100	75	75

"The Assistant Chief of Staff, Intelligence, USAF, believes that the Soviets have a positive requirement for a bomber with supersonic dash capability for employment by Long Range Aviation, primarily in the advance wave(s) of strategic bomber strikes. Considering recent reports and sightings of new bomber types, and historical and continuing Soviet interest in the bomber as a strategic weapon delivery system, and the accepted technical capability of the USSR to develop and produce a supersonic dash bomber, the Assistant Chief of Staff, Intelligence, USAF, believes that the introduction of a supersonic dash bomber into operational units is likely by 1962.

**SOVIET LONG RANGE AVIATION**  
(Estimated Strength in Operational Units)

	Mid- 1960	Mid- 1961	Mid- 1962	Mid- 1963	Mid- 1964
<i>Heavy Bombers</i>					
BISON and BEAR	135	150	140	130	120
<i>Medium Bombers*</i>					
BADGER	1,100	1,050	1,000	900	800
TOTALS	1,235	1,200	1,140	1,030	920

\*Might also include a few supersonic "dash" medium bombers in 1962, building to perhaps 100 in 1964, in which case we would expect a corresponding decrease in the number of BADGERS.

### Intercontinental Ballistic Missiles<sup>19</sup>

11. During 1959, the Soviet ICBM test program, which we believe is effectively testing a complete ICBM system, has proceeded in an orderly manner. Development of the ICBM does not appear to be on a crash basis. Since inception of testing in August 1957, there have been periods of launching activity and inactivity, but the evidence is insufficient to determine whether the inactive intervals were due to setbacks in the program. In any event, both the rate and number of ICBM test firings up to this time are lower than had been expected.

12. It has not been possible to confirm that series production of ICBMs has actually begun as the Soviets claim, nor that operational launching facilities exist. Considering that production lead times are probably on the order of 12-18 months, the USSR has had sufficient time to begin turning out series-produced missiles. In the light of all the evidence, we believe that a Soviet initial operational capability (IOC) with a few, say 10, series-produced ICBMs is imminent, if in fact it has not already occurred. Although the evidence is insufficient to support a precise estimate of IOC date, we believe that for planning purposes it should be considered that

<sup>19</sup>For a fuller discussion of this subject and the evidence upon which these judgments are based, see NIE 11-5-59, "Soviet Capabilities in Guided Missiles and Space Vehicles," dated 3 November 1959, TOP SECRET.

this had occurred by 1 January 1960. We have no direct evidence as to Soviet deployment concepts, but believe that the Soviet ICBM force could employ fixed sites, rail mobile units, or a combination of the two. In any case, it will be heavily dependent on the Soviet rail net.

13. We estimate that the initial Soviet ICBM will be capable of delivering a 6,000 lb. warhead to a maximum range of 5,500 n.m. with a heat-sink nosecone configuration. A reduction in warhead weight would permit an increase in range. For example, a range of about 7,500 n.m. could be achieved with a warhead of about 3,000 lbs. and the same nosecone configuration. Use of an ablative nosecone would permit an even heavier warhead or extended range. In general, the USSR is likely to equip its ICBMs with warheads of the maximum yield attainable within the limits of its nuclear and missile technology.

14. We estimate Soviet ICBM guidance at IOC date as a combination radar track/radio command/inertial system which is called "radio-inertial," although an all-inertial system is possible. Soviet capabilities in related components at IOC point to a *theoretical* CEP of about 2 n.m. with the radio-inertial system. The Soviets probably will incorporate the all-inertial system in their ICBM some time during the 1960-1962 period and, should they adopt this system in 1960, they could achieve a *theoretical* CEP of about 3 n.m. The data available for estimating both the above *theoretical* CEP's are far from exact. The precise amount of degradation which would be introduced by operational factors is unknown, but we estimate a CEP under operational conditions at IOC date of about 3 n.m. with the radio-inertial system; with an all-inertial system the operational CEP in 1960 would be about 5 n.m. We further believe that the Soviets will be able to improve the accuracy of their ICBM following IOC, and that over the next few years, and probably not later than during 1963, the operational CEP for an all-inertial system could be reduced to about

2 n.m., and the operational CEP of the radio-inertial system would be somewhat better.<sup>20</sup>

15. The reliability of the Soviet ICBM probably will also be greatly improved. It is estimated that during the period from IOC to mid-1963 the in-commission rate will probably increase from about 70 percent to about 80 percent, and reliability on launcher from about 80 percent to about 90 percent. We believe that the missile's inflight reliability—that is, its reliability after leaving the pad—at IOC lies in the range between 55 percent and 75 percent, and at IOC plus three years lies in the range between 70 percent and 85 percent. Within these ranges the Assistant Chief of Staff for Intelligence, Department of the Army, and the Assistant Chief of Naval Operations for Intelligence, Department of the Navy, believe the reliabilities in question lie at the lower ends; the Assistant Chief of Staff, Intelligence, USAF, estimates that the reliabilities lie at the upper ends.

<sup>20</sup> The Assistant Chief of Staff for Intelligence, Department of the Army, believes that the estimates of Soviet ICBM accuracy stated in this paragraph either reflect, or were suggested by recent US ICBM test experience which caused certain members of the USIB to revise their judgment as to the validity of the most recent intelligence study of this problem conducted for the USIB by the Guided Missile and Astronautics Intelligence Committee (GMAIC). The Assistant Chief of Staff for Intelligence, Department of the Army, recognizes that it is prudent to estimate that the Soviets would sooner or later, if not currently, possess an ICBM system of an accuracy comparable to that of the US ICBM. However, at present, he perceives no justification for abandoning the estimates derived from so recent an analysis of all available technical intelligence information. A further significant consideration is that estimates of *operational* accuracy are based on *theoretical* degradation of test range performance which further increases the uncertainties in such estimates. Accordingly, it is believed that there is no present intelligence basis for changing the conclusions as to operational accuracy as contained in the GMAIC report and, therefore, that the more likely range of *operational* accuracy for Soviet ICBM at IOC, using "radio-inertial" guidance, is on the order of a 3-5 n.m. CEP; that by sometime in 1963, with the all-inertial system, the CEP could be reduced to 2.5 n.m., although the operational CEP of the "radio-inertial" system would be somewhat better.

16. The net effect of improvements in ICBM performance, especially in accuracy and reliability, would be to reduce sharply the number of ICBMs required in operational inventory to attack a given target system.

17. There is practically no evidence regarding Soviet plans for the production and operational deployment of ICBMs. We have examined possible alternative Soviet objectives and requirements in the light of our estimates of the USSR's national strategy, military doctrine, economic capabilities, and the world situation. We have concluded that the Soviet ICBM program, while not a crash program, is probably designed to provide a substantial ICBM capability at an early date without disrupting other programs to which the Soviet leaders have attached great importance. The goal of the program is probably an ICBM force as large as Soviet planners deem necessary to provide a substantial deterrent and pre-emptive attack capability. The Soviets would expect that a force large enough to meet these military criteria would also have great value in terms of political exploitation.<sup>21</sup>

18. In estimating the numbers of ICBMs required to achieve these goals, we have considered both the estimated characteristics of the Soviet ICBM and the probable size and nature of US nuclear retaliatory forces against which it would be employed. We have concluded that the probable Soviet ICBM program would provide on the order of 140-200 ICBMs on launcher in mid-1961. Within this range, the Assistant Chief of Staff for Intelligence, Department of the Army, and the Assistant Chief of Naval Operations for Intelligence, Department of the Navy, estimate that the Soviet program is likely to be toward the low side. The Director of Intelligence and Research, Department of State, the Assistant Chief of Staff, Intelligence, USAF, and the Director for Intelligence, The Joint Staff, be-

<sup>21</sup> The Assistant Chief of Staff, Intelligence, USAF, does not concur in the judgments expressed in this paragraph. For his position see his footnote to paragraph 18 below.



lieving that Soviet planners would regard the advantages to be gained as justifying additional effort, estimate that the number of Soviet ICBMs on launcher is likely to be towards the high side of the 140-200 range.

19. The development of the Soviet ICBM force beyond 1961 would be likely to be affected by such consideration as the actual development of the target system to be attached, the prospects for a greatly improved Soviet ICBM, and the prospects (on both sides) for an effective anti-ICBM, as well as by the general development of the world situation and of relations between the US and the USSR. Any figures for future years should be reviewed in the light of such considerations and of evidence on the actual progress of the Soviet ICBM program. Projecting our estimates of the present ICBM program (and assuming that if the USSR has approximately 200 ICBMs on launcher in mid-1961 production would substantially level off in the subsequent two years) the most likely number of Soviet ICBMs on launcher in mid-1962 would be 250-350 and in mid-1963 would be 350-450.<sup>22</sup>

#### Medium Range Ballistic Missiles

20. We believe that the Soviets now have operational ballistic missiles of 700 and 1,100 n.m. ranges, which add significantly to their attack capabilities. The 700 n.m. missile

<sup>22</sup> The Assistant Chief of Staff, Intelligence, USAF, does not believe that Soviet behavior, as we have observed it, warrants the judgment that their objectives would be satisfied by attainment of only substantial deterrence and pre-emptive attack capability. Rather, he believes that the Soviet rulers are endeavoring to attain at the earliest practicable date a military superiority over the United States which they would consider to be so decisive as to enable them either to force their will on the United States through threat of destruction; or to launch such devastating attacks against the United States that, at the cost of acceptable levels of damage to themselves, the United States as a world power would cease to exist. He further believes that such an objective could be attained by the development of their overall military capabilities which would include an operational ICBM force of about 250 (185 on launcher) by mid-1961, 500 (385 on launcher) by mid-1962, and 800 (640 on launcher) by mid-1963. It is generally agreed that the Soviets have both the technical and

(SS-4), which is believed to have a CEP of 1-2 n.m. and to carry a 3,000 lb. warhead, probably has been operationally available since 1956. The 1,100 n.m. missile (SS-5), estimated to have a CEP of 2 n.m. and the same size warhead, probably became operational in late 1958 or early 1959. All-inertial guidance could probably be available for both of these systems now or within the next year. The SS-4 is believed to be road mobile, and the SS-5 may be road and/or rail mobile.

21. Factors of timing and security, as well as the programmed improvement in Western air defenses, will make it increasingly desirable that an initial Soviet attack against Western retaliatory bases be delivered primarily with ballistic missiles launched from within the USSR. Even from within the USSR, medium-range ballistic missiles could deliver nuclear warheads against a large majority of critical targets in Eurasia and its periphery. Numerous bombers, as well as shorter range missiles, will be available throughout the period for follow-on attack and other related missions.

22. We estimate that with relatively modest SS-4 and SS-5 programs, the Soviets could meet the calculated requirement for an initial attack against land-based retaliatory targets within 700 n.m. of the USSR from about 1960 on, and against such targets within 1,100

industrial capability to produce such a force; the physical difficulties thereby entailed will almost certainly not be the limiting factor.

It is the view of the Assistant Chief of Staff, Intelligence, USAF, that, while Soviet planners will undoubtedly feel that they will have attained a capacity for substantial deterrence and pre-emptive attack by mid-1962 or earlier, the real objective of the Soviet ICBM program is "decisive military superiority." He believes that the Soviets would not be content with conceptual levels of deterrence; they would realize the possibility of error in their own calculations and acknowledge the possibility of Western pre-emption of their deterrent capabilities. This latter contingency would weigh the more heavily if the Soviet leaders intended, as he believes likely, to exploit their capabilities in political offensives. In this event, their estimate of the likelihood of Western "desperate" acts would induce them to attempt attainment of total deterrence, i.e., "decisive military superiority."

n.m. from about 1961 on. The table below includes numbers of launchers, estimated as required for a Soviet initial salvo capability, together with the quantity of missiles required for the initial salvo as well as for subsequent use in the initial phase of a general war and for employment in later phases of a sustained conflict. Should changing circumstances require somewhat greater numbers of missiles or even launchers, their production and deployment by 1964 would not present serious difficulties to the USSR.

	Mid- 1960	Mid- 1961	Mid- 1962	Mid- 1963	Mid- 1964
SS-4 (700 n.m.)					
Launchers .....	110	150	150	150	150
Missiles .....	250	350	450	450	450
SS-5 (1,100 n.m.)					
Launchers .....	50	100	100	100	100
Missiles .....	80	160	240	300	300

### Submarine-Launched Missiles

23. In recent years there have been increasing indications of Soviet interest in developing a capability to launch guided missiles from submarines. We estimate that in a first effort, about two "W" class submarines were modified to launch, while surfaced, two subsonic cruise-type missile (SS-7) capable of delivering a 2,000 lb. warhead to a range of 150-200 n.m. with a 2-4 n.m. CEP. In a later effort, about four "Z" class submarines have been modified (by enlarging the sail) probably to launch two ballistic missiles each. These probably could not be launched while the submarine is submerged, but it has not yet been determined whether the submarine would have to be fully surfaced or only partially surfaced. We have no specific information to permit identification of missiles for this purpose, but we believe that compatible missiles may be capable of delivering a 2,000 lb. warhead to a range of 200 n.m. (or less likely of 350 n.m.) with an operational CEP of 1-3 n.m. The most recent development is the appearance of a new class of conventionally powered submarine—designated "G" class by US intelligence—six of which are probably now in operation with the Fleet. Although the evidence in this case is not so convincing as in the case of the modified "Z" class, we evaluate

the "G" class as probably having ballistic missile launching capabilities. Their very large sail, considerably higher and longer than that of the modified "Z" class, suggests that they could each carry about five ballistic missiles capable of delivering a 2,000 lb. warhead to a range of 350 n.m. with an operational CEP of 1-3 n.m. Shorter or even longer range ballistic missiles are considered less likely possibilities. We estimate that the USSR will build up to an operational strength of about 18 "G" class submarines in mid-1962. The USSR probably will retain these and converted missile submarines during the period of this estimate.

24. In view of operational considerations, the most desirable new system would be a nuclear-powered submarine capable of launching, while submerged, ballistic missiles of at least 500 n.m. range. On the basis of Soviet technical capabilities, we estimate that in 1961-1963 the USSR could have available for operational use a submarine-launched ballistic missile (SS-9) capable of delivering a 1,000 lb. warhead to a range of 500-1,000 n.m. with a CEP of 2-4 n.m. Present indications are that the Soviet nuclear-powered submarine program is sufficiently far advanced so that the SS-9 missile could be incorporated as soon as the missile becomes available.

25. In the absence of direct evidence, but considering the potential value of the weapon system, we have assumed an active current development program which would make a nuclear submarine/ballistic missile system ready for operational use in 1961.<sup>23</sup> Thereafter, in a reasonable construction program, the Soviets could probably introduce a few such submarines into operational units annually, while continuing the construction of nuclear submarines equipped with torpedoes. On this basis, we estimate that about 14 nuclear-powered submarines equipped with 500-1,000 n.m. missiles will be operational in 1964. With proper operating procedures and

<sup>23</sup> The SS-9 missile system may not be available until as late as 1963, in which case the missile used in the "G" class might be used in the first Soviet nuclear-powered missile launching submarines.

alternate crews, a considerable portion of this number—perhaps half—could be deployed off US coasts at all times, should the Soviets so desire.

### Capabilities for Long Range Attack

26. At present, by employing their entire heavy bomber force, many of their medium bombers, their small submarine-launched missile capability, and possibly a few ICBMs, the Soviet could mount large-scale initial nuclear attacks against North American targets. The actual weight of attack launched against the US would depend upon the Soviet judgment as to the optimum combination of surprise and weight of attack against all areas where US and Allied nuclear retaliatory capabilities and other essential targets were located. Against those Western capabilities deployed on the periphery of the Bloc, the Soviets could employ 700 and 1,100 n.m. ballistic missiles and light and medium bombers. Bombs and air-to-surface missiles could be employed against Western naval forces possessing nuclear strike capabilities. The Soviet leaders probably regard their current long-range attack forces as adequate to deliver a devastating attack on concentrations of population and industry, but incapable of preventing, by military action, the nuclear devastation of the USSR.

27. Because the ICBM offers the best prospect of being able to achieve the destruction of a substantial portion of the US nuclear retaliatory capability prior to launch, the future development of Soviet intercontinental attack capabilities will be primarily a function of the production and deployment of ICBMs. Through the period of this estimate, however, the long-range striking capabilities of the USSR will include both manned bombers and ballistic missiles. The Soviets probably will consider that ballistic missiles can best be employed to neutralize Western retaliatory and other capabilities in an initial blow, relying upon bombers for followup attacks. Missile-carrying submarines will add to Soviet capabilities, but the scale of their use would depend upon Soviet judgment of the risk of premature disclosure. Soviet employment of long-range striking capabilities would con-

tinue to face great difficulties of timing and distribution of attack against widely deployed, mobile and ready Western strengths.

### AIR DEFENSE FORCES<sup>24</sup>

#### Weapons Systems

28. At present, the principal weapon system for defense of Sino-Soviet Bloc targets against high-altitude attack is the jet fighter. As of 1 October 1959, there were over 14,000 operational throughout the Bloc, with more than 10,500 in Soviet units. The Soviet fighter force consists primarily of day fighters, including about 900 transonic FARMERS, 6,700 subsonic FRESCOs, and about 1,800 obsolescent FAGOTs. The FAGOTs should be completely phased out over the next five years. There is good evidence that a Mach 2 fighter—probably developed from the FITTER/FISHPOT series—is now being introduced into units, and that another advanced fighter probably is in production. Also in service are the FLASHLIGHT all-weather fighter and the FRESCO "D" and FARMER "B" with limited all-weather capabilities, but their introduction has proceeded at a relatively slow pace. About 400 FLASHLIGHTs and 800 FRESCO "D" types are operational, and some FARMER "B" types are also in operational units.

29. Most Bloc jet fighters now operational have combat ceilings of around 50,000 feet; however, FARMER and FITTER have combat ceilings of about 60,000 feet. There is some evidence that air-to-air missiles have been supplied to operational units, and most of the current gun-armed interceptors are believed to be capable of employing unguided rockets, guided missiles, or combination armaments. During the period of this estimate, the USSR will probably introduce new fighter types designed to emphasize speed and altitude. By 1962 the USSR could have operational fighter aircraft with a Mach 2.5 speed capability and a combat ceiling of about 67,000 feet.

<sup>24</sup> A National Intelligence Estimate on Sino-Soviet Bloc air defense is scheduled for production in March 1960.

30. Soviet production of jet fighter aircraft has dropped sharply over the past three years. From 1950 through 1956, annual production ranged from about 3,500 to about 5,000. It is estimated to have declined to about 400-450 in 1959. Production difficulties with the newer models probably have played some part in this decline but other factors include the high cost and complexity of modern fighter aircraft, the growing destructive power of individual interceptors, and especially the increasing availability and effectiveness of surface-to-air missile systems. The Soviets probably will continue to design and develop fighter aircraft, but the number operational will probably decrease over the next five years.

31. The Soviets now have operational at least two types of surface-to-air missile systems.<sup>23</sup> The first of these (SA-1), which has been operational for several years, is deployed in a dense and costly complex of 56 sites around Moscow, each having 60 launching positions. This system is capable of interception at altitudes between 3,000 and 60,000 feet, and probably has limited effectiveness up to 80,000 feet. The single stage missile first associated with this system is believed to have maximum range of 20-30 n.m. and a maximum velocity of Mach 2.5, and is capable of carrying either an HE or a nuclear warhead. The Moscow complex can probably direct a very high rate of fire against multiple targets under all weather conditions, but the system is probably ineffective against very low-altitude attacks. We do not believe that this type of missile system will be deployed elsewhere in the Soviet Union.

32. Recent evidence indicates that during at least the past year, the USSR has been engaged in the rapid and extensive deployment of a new, more flexible surface-to-air missile system (SA-2) which appears suitable for rapid transport and installation for defense of both fixed targets and Soviet field forces. A typical site consists of six revetted launching positions deployed around a guidance sys-

tem and linked by service roads to facilitate reloading. Such sites have been observed in East Germany and at numerous locations in the USSR, including the Moscow area. We believe that the missile employed in this system is a boosted two-stage missile with a maximum range of 25-40 n.m. and a maximum velocity of about Mach 3. Its maximum altitude capability is estimated to be at least 60,000 feet, with some effectiveness up to about 80,000 feet. Each site employing the new system appears capable of 360 degree coverage, and of engaging more than one target at a time. It is believed capable of engaging targets at altitudes below the 3,000 foot lower limit estimated for the SA-1, but is probably ineffective against very low-level attack.

33. In the absence of evidence, but considering Soviet technical capabilities and probable needs, we estimate that within the next year or two the USSR will probably have available two additional surface-to-air missile systems, one designed primarily to engage very low altitude targets, the other for long-range (on the order of 100 n.m.) engagement of targets at altitudes up to 90,000 feet. These systems will have increased kill capabilities against aircraft and cruise-type missiles. We believe that high-priority has been given to the development of an antiballistic missile system, and that the USSR could achieve a first operational capability in 1963-1966 with a system of undertermined effectiveness against ICBMs, IRBMs, submarine-launched, and air-launched ballistic missiles. A ground-based missile system with a limited capability against reconnaissance satellites could be first available in the period 1963-1965.

34. The Soviets continue to employ anti-aircraft guns for defense of field forces and fixed targets, including airfields. The USSR now has more than 25,000 operational anti-aircraft guns ranging in size from 37 mm. to 130 mm. A large percentage of these employ fire control radars. Proximity fuzes probably are used in some AAA ammunition. European Satellite forces have about 5,000 anti-aircraft guns and there are about 4,000 in Communist China, North Korea, and North Vietnam.

<sup>23</sup> For a fuller discussion of Soviet air defense missile systems, see NIE 11-5-59, "Soviet Capabilities in Guided Missiles and Space Vehicles," dated 3 November, 1959, TOP SECRET.

Soviet field forces also have large numbers of automatic antiaircraft machine guns. Under certain conditions Soviet antiaircraft guns can deliver continuously pointed fire well above 40,000 feet. However, the 100 mm. gun, the principal type now employed in static defenses, declines rapidly in effectiveness against targets at altitudes above 35,000 feet or at speeds in excess of 400 kts. As suitable surface-to-air missiles become available in quantity, a large portion of the medium and heavy guns will probably be phased out of the air defenses of static targets in the USSR.

### Radar and Control Equipment

35. Radar coverage now extends over the entire USSR and East European Satellite area except for certain inland portions of central and eastern Siberia; coverage also extends along the entire coastal region of Communist China. About 1,200-1,500 heavy prime radars, primarily of the TOKEN and BARLOCK types, and about 3,000 light auxiliary radars are employed in various combinations at about 1,900 radar sites in the Sino-Soviet Bloc. Under average conditions, primary early warning radars now in use can probably detect jet medium bombers penetrating at altitudes up to their combat ceilings at distances of 100 to 220 n.m. from radar sites. The major GCI radars are most effective in combination with the newer height-finder radars which are being rapidly deployed throughout the Bloc. Wider deployment of the new types of radars already in service will significantly improve Soviet capabilities against targets flying at medium and high altitudes, and, together with developments in automated control systems, probably will lead to a decrease in total radar numbers, perhaps by 1964. Although some operational radars are now believed to have moving target indicators, the low altitude capabilities of Soviet early warning and GCI radars are limited and will remain poorer than high and medium altitude capabilities. The development of high frequency ionospheric backscatter radars for detection of ICBMs has been within Soviet capabilities for at least five years, and some such radars may now be in position.

36. Several types of airborne intercept (AI) radars now extensively used in all-weather fighters have maximum ranges against medium bombers of about 14 n.m. for search and 8 n.m. for tracking. In addition, day fighters equipped with range only radar and infrared air-to-air missiles would have a limited capability at night in clear weather. Of the known Soviet fighter types, the FARMER B aircraft equipped with infrared missiles would provide the only combination capable of satisfying the requirement for accurate ground control of the intercept mission. Some newer aircraft may have AI radar with search ranges of 15-30 n.m. and track ranges of 10-20 n.m. During the next five years, as the speed of interceptors is increased and air-to-air missiles are improved, the maximum ranges of AI radars probably will increase accordingly. By the end of the period, some Soviet fighters will probably be equipped with AI radar and related electronics gear capable of completely automatic interception. The Soviets are now introducing a new IFF system which will probably be fully operational early in the period.

37. During the past few years the USSR has been installing a new air defense control system with some semiautomatic features, including data-handling equipment for rapid processing of air defense information and data-link equipment for vectoring interceptors. This system, which is similar in concept to the US SAGE system but less complex, has been designed to provide high-speed communications with a high degree of reliability, and accurate semiautomatic control of interceptors. The system is now believed to be widely deployed in the Western USSR and will probably become operational throughout the USSR and Eastern Europe within the next few years. Its widespread use will have a marked effect in reducing reaction time and vulnerability to saturation, increasing information handling capacity, and improving coordination within the Soviet air defense system.

### Air Defense Capabilities

38. The areas of highest concentration of Bloc air defense weapons and associated equipment include that portion of the European USSR

from the Kola Peninsula to the Caspian Sea, East Germany, Poland, Czechoslovakia, and the Maritime and Sakhalin areas of the Soviet Far East. Heavy defense concentrations are also found at some specific locations outside these areas, such as Sverdlovsk, Tashkent, Novosibirsk, and Khabarovsk. The approaches to Moscow are by far the most heavily defended of these areas, including about 900 fighters and 500 anti-aircraft guns in addition to the surface-to-air missile sites noted above.

39. *Passive Defense.* Large passive defense organizations contribute to the air defense readiness of both military personnel and the civilian population. Civil defense instruction under DOSAAF, the Soviet paramilitary mass organization, has been stepped up markedly in recent years. In 1955, a three-stage training program was initiated which was to provide 44 hours of training to all citizens by 1960. Defense against atomic, biological, and chemical weapons was to be included. According to DOSAAF claims, 85.5 percent of the adult population had completed the first-stage 10-hour program by February 1958, and the second stage 22-hour program was scheduled for completion by the end of the year. More recent announcements indicate that Soviet civil defense training has now entered the third, most advanced stage which is scheduled for completion in 1960. DOSAAF claims are believed to be inflated, the announced schedule is lagging, and the quality of training has been poor in some areas. Nevertheless, it is evident that the Soviets are placing increasing emphasis on civil defense instruction which has by now been extended to most of the adult population.

40. The incorporation of air raid shelters into newly constructed buildings is a program of long standing in the USSR, and there is evidence that deep shelters have been provided in some cities for key government and military personnel. However, it is estimated that shelter against direct effects of high-yield nuclear weapons has been provided for only a very small percentage of the urban population. This proportion will probably not rise significantly during the next five years.

41. *Warning Time.* The amount of warning time available significantly affects the capabilities of air defenses in various areas of the Bloc. Early warning radar could now give Moscow and many other targets in the interior more than one hour's warning of attacks made with present Western bomber types. The more limited early warning time available in Bloc border areas would reduce the effectiveness of the defenses of even heavily defended targets in such areas. As the speeds of Western delivery vehicles increase, the problem of warning time will become more critical, despite probable Soviet employment of picket ships, airborne radar and other extensions of warning capabilities.

42. Present Soviet air defense capabilities are greatest against penetrations conducted during daylight and clear weather at altitudes between 5,000 and 45,000 feet. Because of the limited availability of all-weather fighters, capabilities of the fighter defense forces would be reduced during periods of darkness or poor visibility. However, capabilities of surface-to-air missiles would be unimpaired to at least 60,000 feet under all-weather conditions. At altitudes below about 3,000-5,000 feet, capabilities would decrease progressively and would be seriously reduced at very low altitudes. Against varied penetration tactics utilizing altitude stacking, diversionary maneuvers, decoys, and electronic countermeasures, the capabilities of the system would be diminished through disruption and saturation. Overall Bloc capabilities against aircraft and cruise-type missiles will increase through improvements in the characteristics of most Soviet air defense weapons and equipment. But the Soviets will continue to have difficulty in opposing very low altitude attack, and air defense electronic systems will remain subject to disruption and saturation. The USSR probably will achieve a defense system of undetermined effectiveness against ICBMs and other ballistic missiles during the period 1963-1966, and will undoubtedly continue further research and development in antimissile defenses.

SOVIET GROUND FORCES AND  
TACTICAL AVIATION

## Strength and Disposition of Ground Forces

43. The Soviet ground forces, which represent the largest part of the Soviet military establishment, are well-balanced, ably led, and equipped with excellent materiel of recent design and manufacture. Air support for these forces is provided by Tactical Aviation, the largest single component of the Soviet air forces, and by Aviation of Airborne Troops. Under certain circumstances, Long Range Aviation and Naval Aviation could also contribute significant support to land operations; however, such use probably would not be permitted to interfere with their primary missions. Combat troops, along with proportionate amounts of tactical aviation, are distributed among the 17 military districts in the USSR and three groups of forces in the European Satellites. The strongest deployments are in East Germany, the western and southern border regions of the USSR, and the Maritime area of the Soviet Far East. Stockpiles of numerous categories of supply and major items of equipment are believed sufficient to support large-scale combat operations for as much as one year without replenishment from current production. POL stocks, however, are almost certainly not adequate for so long a period.

44. Line divisions in the Soviet ground forces are still estimated (as of 1 November 1959) at about 175 including 23 tank divisions, 79 motorized rifle and mechanized divisions, 63 rifle divisions, and 10 airborne divisions. Under peacetime manning levels, these divisions average considerably below authorized troop strength, especially in interior districts. All these units could probably be brought to full strength within a few days by mobilizing trained reserves. Forces in the border areas and the Satellites, where the highest manning levels and best equipment are maintained, could effectively initiate combat operations without prior reinforcement. Conversion to a war footing could be executed rapidly, and within a month about 125 additional line divisions could be mobilized.

45. In areas of densest concentration, Soviet ground forces are organized into field armies with full complements of combat and service support for line divisions. Supporting units include large numbers of artillery and anti-aircraft artillery brigades and divisions which are either assigned to field armies or pooled under higher command headquarters. Most of the field armies are organized around the motorized rifle division, but a few armies are composed exclusively of tank divisions for speedy exploitation tasks deep in enemy rear areas. It now appears that nearly all mechanized and rifle divisions are being converted to the motorized rifle type. The mechanized division is converted by removing heavy tank and assault gun units, and the rifle division, mainly by adding armored combat vehicles. However, some mechanized divisions are being converted to tank divisions, and a few rifle divisions of the old type may be retained to cope with special terrain. Many mobilization divisions would probably be organized on the old rifle division pattern.

46. The USSR has an estimated 100,000 airborne troops most of which are organized in 10 airborne divisions of 7,000 to 9,000 men each. Other types of line divisions have undergone air transportability training and have small detachments of paratroops. In addition, an estimated 100,000 reservists are qualified paratroopers. A few types of specialized weapons have been produced for airborne troops, but for the most part airborne units are armed with standard infantry weapons and supported by mortars and light artillery. The development of specially designed air transportable weapons and equipment probably will receive greater emphasis over the next few years.

## Ground Forces Weapons

47. The program of modernization and reorganization of Soviet ground forces has involved the introduction over the last several years of more advanced designs of practically all types of equipment including: tanks, armored personnel carriers, self-propelled guns, unguided rockets with ranges to 35 n.m., new artillery pieces and antiaircraft weapons, recoilless antitank weapons, a new family of

small arms, and a wide variety of transport vehicles. In some instances, there have been two successive generations of postwar weapons. The increasing number of tracked and wheeled amphibians and amphibious tanks has greatly improved Soviet river-crossing capabilities. The Soviet ground weapons development program will continue to reflect the demands of tactical nuclear operations. Present trends point to continuing emphasis on firepower and mobility.

48. Soviet development of guided missiles has greatly improved the fire support available to field forces. Road mobile surface-to-surface ballistic missiles with maximum ranges of 75 n.m., 200 n.m., and 350 n.m., have probably been available for operational use since 1954. A 700 n.m. ballistic missile probably entered service in 1956 and an 1,100 n.m. ballistic missile in late 1958 or early 1959.<sup>26</sup> Depending upon operational considerations and the availability of nuclear materials, HE, nuclear, and CW warheads could be employed in all of these weapons. In view of operational considerations, BW use in ballistic missiles is unlikely, although possible for certain special purposes. Nuclear warheads would probably be used in virtually all 700 n.m. and 1,100 n.m. missiles.

49. The shortest range ballistic missile system (SS-1) could be used at ranges between 25 and 75 n.m., which are usual for typical initial objectives of divisions and corps. The 200 n.m. maximum range of the SS-2 is compatible with army objectives. The SS-3 and SS-4, with maximum ranges of 350 and 700 n.m., respectively, as well as the longer range missiles, can attack both initial and subsequent objectives of *fronts*, the largest wartime field commands. However, the employment of missiles of 700 n.m. range and greater would initially be very largely limited to strikes against Western nuclear attack forces.

50. There is virtually no evidence as to the numbers of SS-1, SS-2, or SS-3 ballistic missiles available for operational use, nor as to

the numbers and types of missile units in being. On the other hand, the Soviets have had experience over the past five years in producing these short-range ballistic missiles, probably have an extensive production capacity, and have had ample time to form and train units in their use. We believe, therefore, that the present Soviet capability to employ such missiles is substantial, and may comprise as many as a few thousand missiles.<sup>27</sup> It should be noted that most of these missiles would probably be equipped with nonnuclear warheads.

### Air Support

51. Tactical Aviation is equipped (as of 1 October 1959) with jet aircraft estimated to include about 4,200 fighters, 2,500 light bombers, and 120 medium bombers. The fighters are trained in ground attack techniques (in addition to their air defense role), and the light and medium bombers are trained in ground support bombing. Tactical bomber units are still equipped with the obsolescent BEAGLE, although a few units have received BADGER jet medium bombers. A replacement for the BEAGLE has long been considered a Soviet requirement, and it is possible that a new supersonic tactical bomber—perhaps a development of the BACKFIN prototype displayed in 1957—could enter service next year, and that limited numbers might be introduced for special purposes. However,

<sup>26</sup> In view of the lack of evidence, no more precise estimate as to the numbers of short-range missiles and missile units can be made. As an assumption for planning purposes, we present below what we believe might be reasonable force goals to be achieved by the Soviets at some time within the next few years.

	SS-1 (75 n.m.)	SS-2 (200 n.m.)	SS-3 (350 n.m.)
Battalions <sup>a</sup> . . . . .	60	30	15
Launchers per bat- talion . . . . .	6	4	2
Missile Stocks <sup>b</sup> . . . . .	4,200	1,500	700

<sup>a</sup> The characteristics of these two missiles, together with estimated Soviet requirements and probable programs are discussed in paragraphs 19-21 of this Annex.

<sup>b</sup> Probably organized into brigades of two or or three battalions each.

<sup>c</sup> Some of these missiles in units; majority in supply channels, and in rear area storage.



We now regard its introduction into service as unlikely. We believe that Tactical Aviation will gradually decline in numbers over the next several years as increasing reliance is placed on guided missiles.

52. Aviation of Airborne Troops now comprises approximately 400 light transports of the CAB, COACH, and CRATE types, about 250 BULL piston medium bombers converted to transport use, and several hundred helicopters and gliders. Organic airlift capabilities (less helicopters and gliders) are limited to about two airborne divisions in a single lift, although this capability could be increased by the use of other military and civil transports. A lack of heavy drop capability and a shortage of assault aircraft limit the types of troop units that can be employed. However, Soviet airlift capabilities probably will increase considerably over the next few years as new helicopters and transports are added to the force. Helicopters have already greatly increased the Soviet capability for short-range operations. There is also evidence that at least two new transport types specially designed for airborne operations are now in service: the CAMP, a twin-turboprop assault transport, and the four-turboprop CUB, a military version of the civil transport CAT. It is possible that some CATs have also been assigned to Aviation of Airborne Troops for use as troop carriers. Soviet airlift capabilities will also be improved by the introduction of new aircraft into civil aviation including the CAT and COOT turboprop medium transports, and a turboprop heavy transport, the CLEAT. A twin-jet short-range transport with a cruising speed of about Mach 1 and a heavy jet transport may also be introduced for civil use within the next few years.

#### Capabilities for Land Warfare

53. In accordance with established Soviet policy, the Soviet armed forces have continuously developed and maintained capabilities for the conduct of large-scale invasions concurrently or separately of areas peripheral to the Communist Bloc, such as: Western Europe, the

exits of the Baltic and the Black Seas, Turkey, Greece, northern Norway, Iran, and areas in the Pacific. The estimated considerable improvement in Soviet airlift, including the introduction of new helicopters and transports, significantly increases Soviet invasion capabilities against peripheral areas. Such campaigns could be supported by the large available air forces, but the high priority assigned to air defense would limit the availability of fighter aircraft for such support operations in the initial phase of a general war. Naval support would be available for operations in Bloc coastal areas in support of ground campaigns, or airborne assaults such as against Alaska. Amphibious capabilities are quite limited; the Soviets would have to rely almost entirely on merchant ships to meet the lift requirements of divisional-size units. In a general war, Soviet capabilities to undertake such campaigns would depend to a great extent upon the effects of an initial nuclear exchange, direct Western opposition to advancing Soviet forces, and Western interdiction of essential logistic lines.

#### NAVAL FORCES

##### Strength and Equipment

54. During the decade 1947-1957, Soviet naval forces were greatly strengthened by an intensive building program concentrated on light cruisers, destroyers, and submarines. The Soviet submarine force is the largest ever assembled by any single power in peacetime; about two-thirds of its present strength consists of craft of postwar design and construction. We estimate Soviet naval strength as of 1 January 1960 at 25 cruisers, 129 destroyers, 61 escort vessels, and 421 submarines. These totals include vessels of postwar design numbering 19 light cruisers, 108 fleet destroyers, 61 escort vessels, 259 long-range submarines (6 "G," 9 "F," 21 "Z," and 223 "W" class), and 30 medium range ("Q" class) submarines. They are grouped in four major forces: the Northern Fleet, located in the Barents Sea area; the Baltic Fleet; the Black Sea Fleet; and the Pacific Fleet, concentrated largely at Vladivostok.

55. Present strengths represent a slight decrease since last year due to a decline in naval construction, the retirement of overage vessels, and the assignment of some to the reserve fleet. It now appears that the USSR will maintain approximately the present force levels, and concentrate on qualitative improvement of combat units. New types which have appeared during the last year include guided missile destroyers, a new class submarine chaser, and a new long-range submarine (designated "G" class) which probably has ballistic missiles as its main armament (paragraph 22).

56. The surface forces are supported by Soviet Naval Aviation, which comprises about 15 percent of total Soviet air strength and is now the second largest naval air force in the world. Approximately 2,900 aircraft are assigned to the Soviet fleets, including about 1,600 fighters, 500 jet light bombers, 290 jet medium bombers, and 500 miscellaneous types. The combat aircraft are the same types as those assigned to Tactical Aviation: FRES-CO, FARMER, FLASHLIGHT, BEAGLE and BADGER. Selected naval bomber units have probably been assigned a nuclear delivery role, and several naval BADGER units probably now have an air-to-surface missile capability. (See paragraph 4 of this Annex for estimates of Soviet air-to-surface missiles.)

57. The equipment and operating efficiency of Soviet naval forces, while still below US standards in some fields, are quite high and should continue to improve. Soviet submarine activity during the last year indicated continued emphasis on training for long-range operations which may have included guided missile submarines. Between 50 and 70 percent of the Soviet submarine force is believed to be available for duty at any given time under peacetime conditions, the remainder being held in reserve or maintenance status. A strong defensive capability in the fleet operating areas can be inferred from naval exercises of the last several years, which have stressed defense of the sea approaches to the USSR. Soviet naval weapons now include mines and torpedoes of the most advanced

types. The USSR is technically capable of adapting nuclear warheads to these weapons as well as depth charges, and there is evidence that nuclear tests at Novaya Zemlya have included the testing of naval weapons.

58. *Naval Launched Missiles.* It is increasingly evident that the Soviet Navy's modernization program includes the addition of missiles to surface ship armament. (For a discussion of guided missile submarines see paragraphs 22-24 of this Annex.) Two types of Soviet guided missile destroyers have been observed during the last year. In lieu of main battery guns and torpedoes, these ships are believed to carry subsonic cruise-type missiles of 30-40 n.m. range. Some destroyers are being modified and others newly constructed to carry and launch such missiles. Any cruisers completed or modified in the future will probably be armed with adaptations of ground-launched surface-to-air- and destroyer-launched surface-to-surface systems.

59. *Antisubmarine Warfare.* The Soviet Navy appears to have become increasingly aware of its failure to keep pace with the rapid postwar technological advances in antisubmarine warfare (ASW). In recent years there has been a steady improvement in ASW tactics and equipment, and a major effort has been made in the construction of escort ships. In early 1959 a new class submarine chaser appeared. Antisubmarine rockets and associated sonar equipment are now in use, and evidence indicates greater interest in the development of air ASW capabilities. There is also evidence of air-launched sonobuoys, of ASW helicopters (equipped with dipping sonar) operating from surface ships, and of coordinated ASW exercises on an increasing scale. To meet the threat from US missile-launching submarines, the USSR will almost certainly continue to improve its ASW capability. This would probably include construction of new and better antisubmarine vessels and aircraft as well as development of improved detection systems (both sonar and radar), "killer" submarines, and more sophisticated antisubmarine weapons.

### Submarine Programs

60. *Conventional.* The USSR will probably continue to place primary emphasis on submarines in its naval construction program. Since 1950, the Soviets have built over 300 submarines of the medium and long-range types. Soviet submarine strength has declined somewhat since last year because of transition to new types and retirement of overage boats. This decline is likely to continue for a year or two.

61. *Nuclear.* New evidence tends to confirm our belief that the USSR has an active program in the field of nuclear-powered submarines, although the present status of this program remains uncertain. Unidentified new submarines of several different types have been under development in the USSR in recent years, and it is possible that these types may include boats with nuclear propulsion plants. Evidence suggests further that units of one or more of these unidentified categories were fitting out or undergoing trials in 1957-1958.

62. Information on Soviet development of nuclear reactors suitable for propulsion confirms neither the high technical capability nor the urgent program that would be necessary for an early and substantial deployment of nuclear-powered submarines. It is unlikely that a reactor suitable for submarine propulsion could have become available earlier than the latter part of 1957, or that sea trials under nuclear power could have begun before the spring of 1958. However, in the light of available evidence, we estimate that the USSR now has a few nuclear-powered submarines, although there is no evidence to establish that any are assigned to operational service with the fleet. On the basis of our belief that the Soviet Union will undertake a substantial construction program of nuclear boats, and taking account of construction factors, we estimate that the number of nuclear submarines in the fleet will probably reach about 10 by mid-1961, from which time an annual construction rate of about eight is well within Soviet capabilities.

63. Of these submarines, the first few are estimated to be torpedo attack types, and there is likely to be a continuing requirement for such submarines through 1964. Assuming an active program, which would bring nuclear-powered missile submarines into operation in 1961 (see paragraphs 23-24 of this Annex), we estimate that the USSR's mid-1964 strength in nuclear-powered submarines will comprise about 20 of the torpedo attack type and about 14 of the missile-launching type. Construction of conventional submarines will continue, but because of the greater complexity of nuclear-powered and missile submarines, annual submarine production almost certainly will not reach the high numerical levels of recent years.

### Capabilities for Naval Warfare

64. A grave threat to Allied naval forces and merchant shipping is posed by the Soviet submarine force, which is about eight times the size of the force with which Germany entered World War II. In the event of war, Soviet submarines could conduct intensive torpedo attacks and mining operations against Allied sea communications in most of the vital ocean areas of the world. Soviet Naval Aviation could attack Allied naval forces, shipping, and port facilities within range. Soviet Long Range Aviation units could also conduct attacks on naval targets, but their missions at the outset of a war presumably would be limited to attacks against targets of highest priority. Although the primary threat to Allied naval forces would come from Soviet submarines and aircraft, the surface navy would play a role in preventing attacking forces from operating with impunity close to Soviet shores.

65. The principal naval weaknesses of the USSR will continue to derive from the wide separation of its sea frontiers and its inability to control the sea routes between these areas, although improvements in inland waterways will increase its ability to interchange smaller vessels including submarines. The lack of adequate supply lines to Northern and Far

Eastern Fleet areas and the land-locked position of fleets in the Baltic and Black Seas are additional handicaps.

## SPECIAL WEAPON DEVELOPMENTS

### Nuclear Weapons<sup>28</sup>

66. The USSR is known to have conducted more than 70 nuclear tests since August 1949 in its program to develop a variety of nuclear weapons. Nuclear tests in 1958 included 15 thermonuclear devices ranging in yield from 200 KT to 8 MT and at least 16 smaller devices ranging in yield from about 1 to 50 KT. The last 1958 test series indicates that the Soviets have made further advances in the development of high-yield weapons suitable for use in bombs and missile warheads, and also have apparently sought to improve low-yield weapons from the standpoint of size and economy of fissionable materials. The Soviets now have available a wide spectrum of fission and thermonuclear weapons which is probably adequate to meet their basic military requirements.

67. We estimate that at present the Soviet stockpile could include nuclear weapons in a range of yields from about 1 KT to about 12 MT. We have insufficient evidence to support a firm estimate of the numbers and types of nuclear weapons in the Soviet stockpile. There is, however, considerable evidence from the Soviet nuclear test program providing indications as to the types of weapons which the USSR may be stockpiling. Considering the estimated availability of fissionable materials and the level of Soviet nuclear weapons technology, we believe that at present the USSR has sufficient nuclear weapons to support a major attack by its long-range striking forces. We do not believe that the present Soviet fissionable material stockpile permits the use of very large numbers for tactical and air defense uses along with substantial numbers of high-yield weapons. However, presently estimated rates of production will permit

<sup>28</sup> For further details see NIE 11-2-59, "The Soviet Atomic Energy Program," dated 16 June 1959, TOP SECRET, Limited Distribution.

the Soviets to allocate large numbers (in the thousands) of low-yield weapons to such uses within the next year or so.

### Chemical and Biological Warfare

68. Current Soviet tactical doctrine recognizes the potentialities of CW and BW as useful complements to other weapons. Soviet military forces receive training in the offensive use of CW as well as in defense against it. The Soviet stockpile of CW agents is conservatively estimated at 100,000 tons. It probably consists largely of the nerve agents, principally Tabun (GA), a smaller quantity of Sarin (GB), and some agents of the V-type, which are far more persistent and toxic than the G-agents. The older standard agents such as mustard probably are included but in lesser quantities. The Soviets are also aware of the capabilities of new nonlethal incapacitating agents, such as lysergic acid derivatives, and could have at least one incapacitating agent ready for field use by 1965.

69. The existence of an active Soviet BW research and development program has been confirmed, through identification of a research center and field test site as well as through extensive Soviet literature applicable to this subject. The Soviet program probably includes research on antipersonnel, antilivestock, and possibly anticrop agents. There is no evidence of the existence of a mass-production facility for BW agents, but existing plants for the production of biologicals, together with other laboratories, could easily produce BW agents in quantities sufficient for clandestine employment and probably for larger scale use.

### Electromagnetic Warfare

70. At present the USSR has an appreciable capability for jamming Western radars at frequencies up to 10,000 mc/s and possibly higher, and especially for jamming at lower frequencies normally used in Western long-range radio communications. The Soviets are now producing magnetrons and travelling wave tubes suitable for jamming in the microwave frequencies, and research in this field is continuing. They are also currently employing passive detection equipment believed capa-

ble of detecting signals from the very low frequencies up into the microwave spectrum. By 1964, the USSR will have in operational use equipment capable of jamming at frequencies from 10 kc/s through 36,000 mc/s, including all frequencies likely to be employed by Western communications, radar, and navigation equipment. There is no evidence that the Soviets have conducted high altitude nuclear explosions to test communications jamming effect, but they are certainly aware of the potential value of such a countermeasure.

71. The Soviets probably are continuing research on radar camouflage techniques, including antiradar coating and the reduction of radar cross-sections of both aircraft and missiles. They are unlikely to develop suc-

cessful operational camouflage for aircraft in the 1959-1964 period, but they may achieve a significant reduction in the radar cross-sections of missiles by the end of the period. They are also known to have employed electronic deception against Western aircraft. This has included simulation of Western navigational aids in border regions which has led Western aircraft off course and, on occasion, over Bloc territory. A trend toward greater frequency diversification in Soviet radar and radio equipment has appeared and they are probably developing improved antijamming techniques. However, through 1964 Soviet electronic systems will probably still be subject to disruption by properly employed techniques.

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## ANNEX B

### TABLES OF SINO-SOVIET BLOC MILITARY FORCES

NOTE: On 14 January 1960 Khrushchev announced the personnel strength of Soviet armed forces as 3,623,000; we believe this figure should be accepted as substantially correct. He also announced plans for further reductions in strength by 1,200,000 men during the next two years, and for alterations in force structure. In view of these and other indications, we have undertaken to produce, by 1 May 1960, a revised estimate of present and future Soviet force strengths.

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## ANNEX B

### TABLES OF SINO-SOVIET BLOC MILITARY STRENGTHS AND CHARACTERISTICS OF SELECTED WEAPONS AND EQUIPMENT\*

TABLE 1

ESTIMATED ACTUAL STRENGTH OF BLOC ACTIVE MILITARY PERSONNEL, FOURTH QUARTER 1959<sup>a</sup>

	ARMY GROUND FORCES	AIR FORCES (Including Naval Avia- tion)	NAVAL FORCES	AIR DEFENSE CONTROL AND WARNING	MILITARIZED SECURITY FORCES	TOTALS (Ex- cluding Se- curity)
USSR (rounded totals).....	<sup>b</sup> 2,650,000	<sup>b c</sup> 820,000	<sup>b d</sup> 720,000	75,000	400,000	4,265,000
EE Satellites (rounded totals).....	880,000	85,000	45,000	.....	280,000	1,010,000
Albania.....	25,000	1,500	1,500	.....	10,000	28,000
Bulgaria.....	110,000	10,000	6,200	.....	35,000	126,200
Czechoslovakia.....	170,000	20,000	.....	.....	45,000	190,000
East Germany.....	75,000	6,000	11,000	.....	50,000	92,000
Hungary.....	100,000	4,000	.....	.....	35,000	104,000
Poland.....	200,000	<sup>e</sup> 34,500	15,000	.....	45,000	249,500
Rumania.....	200,000	10,500	11,000	.....	60,000	219,700
Communist Asia (rounded totals)...	3,240,000	125,000	70,000	.....	35,000	3,435,000
Communist China.....	2,643,000	<sup>f</sup> 98,000	61,000	.....	.....	2,809,000
North Korea.....	327,000	24,500	7,000	.....	.....	367,500
North Vietnam.....	270,000	250	2,000	.....	35,000	272,000
Bloc totals (rounded).....	6,770,000	1,030,000	835,000	75,000	715,000	8,710,000

- <sup>a</sup> Figures in this table are based on estimated order of battle. Estimates of this type yield approximate rather than precise measures of strength at any given time, and can lag considerably behind changes in actual strength.
- <sup>b</sup> These figures do not include ground, naval, and air forces personnel permanently assigned to the air defense forces (PVO) with aircraft control and warning as their primary duty. The subject of air defense control and warning personnel is being examined in greater detail in forthcoming National Intelligence Estimates.
- <sup>c</sup> For purposes of this table, an estimated 110,000 naval aviation personnel are included in total Soviet air forces personnel strength.
- <sup>d</sup> Does not include KGB naval forces which in this table are carried in Soviet security forces total.
- <sup>e</sup> Includes 1,000-2,000 naval air.
- <sup>f</sup> Includes 19,500 naval air.

\* Characteristics of Soviet medium and heavy bombers appear in Annex D of NIE 11-8-59, "Soviet Capabilities for Strategic Attack Through Mid-1964," dated 9 February 1960. Detailed tables on missile characteristics appear in NIE 11-5-59, "Soviet Capabilities in Guided Missiles and Space Vehicles," dated 3 November 1959.

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TABLE 2  
ESTIMATED STRENGTH OF BLOC GROUND FORCES IN LINE DIVISIONS, 1 NOVEMBER 1959.

COUNTRY	RIFLE DIVISIONS			MECHANIZED DIVISIONS			MOTORIZED RIFLE DIVISIONS			TANK DIVISIONS			AIRBORNE DIVISIONS			TOTAL
	No.	TOE	Actual	No.	TOE	Actual	No.	TOE	Actual	No.	TOE	Actual	No.	TOE	Actual	
USSR <sup>a</sup>	63	13,335	8,850	..	..	..	79	13,150	9,300	23	10,030	8,300	10	9,000	7,000	4 175
Communist China	114	17,600	15,000	..	..	..	..	..	..	3	7,800	6,600	3	8,300	7,000	123
East Germany	..	..	..	..	..	..	4	13,000	7,000	2	10,500	6,000	..	..	..	6
Poland	2	11,500	6,000	5	14,000	9,000	2	13,000	8,000	4	10,500	7,000	1	8,000	6,000	14
Bulgaria	7	11,500	5,500	..	..	..	..	..	..	..	..	..	..	..	..	7
Czechoslovakia	3	11,500	6,000	3	14,000	8,000	5	13,000	7,000	3	10,500	6,000	..	..	..	14
Hungary	..	..	..	..	..	..	5	13,000	7,000	..	..	..	..	..	..	5
Rumania	10	11,500	8,000	1	14,000	8,500	..	..	..	1	10,500	7,000	..	..	..	12
North Korea	18	10,700	9,600	..	..	..	..	..	..	..	..	..	..	..	..	18
North Vietnam	13	12,640	9,800	..	..	..	..	..	..	..	..	..	..	..	..	13
Total	230	..	..	9	..	..	95	..	..	36	..	..	14	..	..	387

<sup>a</sup> As of August 1959, 141 of the 175 line divisions currently accepted had been reidentified during the previous 2½-year period. Of the remainder, only 3 had not been reidentified since August 1955. Except in limited areas where comprehensive coverage is available, evidence does not indicate the actual current strength of these units. Even in such areas, the actual strengths of divisions vary. The figures shown above represent averages.

<sup>b</sup> Additional Soviet combat units are estimated to include 20 artillery divisions, 80 antiaircraft artillery brigades and 120 separate brigades.

<sup>c</sup> Includes some Soviet mechanized divisions probably in the process of reorganization.

<sup>d</sup> Estimated dispositions of Soviet line divisions: northwestern USSR, 9; western USSR, 55; southwestern USSR, 21; southern USSR, 22; central USSR, 12; Soviet Far East, 31; Occupied Europe, 25 (East Germany, 20; Poland, 2; Hungary, 3).

<sup>e</sup> It is estimated that 67 of the Chinese Communist rifle divisions have an actual strength of 15,000 and that actual strength of the remaining 47 divisions ranges from 6,000 to 14,000.

<sup>f</sup> The total of Chinese Communist divisions includes 3 small cavalry divisions.

<sup>g</sup> The Hungarian ground forces now considered have very limited effectiveness; ground forces in continuing process of formation will ultimately amount to some 6-9 divisions.

<sup>h</sup> Estimated breakdown by major groupings: USSR, 175; Communist China, 123; European Satellites, 57; North Korea and North Vietnam, 31.



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TABLE 3  
ESTIMATED ACTUAL STRENGTH OF BLOC AIR UNITS, 1 OCTOBER 1959 TO MID-1964

	1 OCTOBER 1959			MID-1960		MID-1961		MID-1962			MID-1963		MID-1964		
	USSR	E.E. SAT.	CCAF NVA NKAF	USSR		USSR		USSR	E.E. NVA NKAF	CCAF NVA NKAF	USSR		USSR	E.E. NVA NKAF	CCAF NVA NKAF
<b>FIGHTER</b>															
Jet.....	10,300	2,060	1,925	10,050		9,300		8,650	3,030	2,575	7,850		6,700	3,165	2,600
Prop.....			35												
<b>ATTACK</b>															
Jet (Ftr).....	205	100	300												
Prop.....		220	40												
<b>LIGHT BOMBER</b>															
Jet.....	2,525	165	465	2,390		2,100		2,010	495	750	1,850		1,700	530	700
Prop.....			215												
<b>MEDIUM BOMBER/TANKER</b>															
Jet.....	1,510			1,570		1,520		1,470		10	1,370		1,270		15
Prop.....	140		20							20					15
<b>HEAVY BOMBER/TANKER</b>															
Jet and Turboprop.....	120			135		150		140			130		120		
<b>TRANSPORT</b>															
Jet (Med).....				20		25		30			40		45		
Prop (Lt).....	1,630	105	200	1,615		1,540		1,440	165	400	1,360		1,255	175	375
Prop (Med).....	250			355		420		490			520		540		
<b>HELICOPTER</b>															
Light.....	430	30	70	450		500		500	130	280	550		550	210	320
Medium.....	30			75		100		125			150		175		
<b>RECONNAISSANCE</b>															
Jet (Ftr).....	105	45	15												
Jet (Lt Bombr).....	420	10		360		350		340	50	180	310		270	50	210
Prop.....	110	65	10	100		125		175		30	225		225		30
<b>UTILITY/LIAISON</b>															
Jet (Ftr).....															
Jet (Lt Bombr).....	110			120		120		120			100		100		
Prop (Misc).....	65	10	40												
<b>TRAINER</b>															
Jet (Ftr).....	730	230	145	800		800		700	305	205	600		500	320	215
<b>Rounded totals</b>	18,700	3,000	3,400	18,000		17,000		16,200	4,200	4,500	15,100		13,500	4,500	4,500

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## Footnotes for Table 3.

- <sup>a</sup> It is possible that a new supersonic jet light bomber could be available to Soviet units in 1960, but we regard the introduction of such an aircraft into service as unlikely (see para. 50, Annex A).
- <sup>b</sup> Soviet units might include a few supersonic "dash" medium bombers in 1962, building to perhaps 100 in 1964. The Assistant Chief of Staff, Intelligence, USAF, believes that the introduction of a supersonic dash bomber into operational units is likely by 1962 (see footnote 3, para. 10, Annex A).
- <sup>c</sup> The Assistant Chief of Staff for Intelligence, Department of the Army, believes that future heavy bomber strength will approximate the following: mid-1960, 125; mid-1961, 115; mid-1962, 100; mid-1963, 75; mid-1964, 75. The Assistant Chief of Staff, Intelligence, USAF, believes that future heavy bomber strength will approximate the following: mid-1960, 135; mid-1961, 150; mid-1962, 175; mid-1963, 200; mid-1964, 200. The reasons for these differing views are set forth in footnotes 1 and 2 to para. 10, Annex A.
- <sup>d</sup> The Assistant Chief of Staff, Intelligence, USAF, believes that a small number of nuclear powered bombers may appear in operational status by the end of the period of this estimate (see footnote to para. 8, Annex A).
- <sup>e</sup> In addition to the types listed in this table, it is estimated that the USSR has more than 1,000 small helicopters in service. Because of their varied uses—reconnaissance, antisubmarine warfare, and general utility purposes—these probably will enter service in substantially larger numbers during the period of this estimate. The USSR has also developed heavy helicopters which may be available to military units during the period of this estimate.

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TABLE 4  
ESTIMATED GEOGRAPHIC DISTRIBUTION OF SOVIET AIR STRENGTH BY ROLE, 1 OCTOBER 1959

	EASTERN EUROPE <sup>a</sup>	NORTH- WESTERN USSR <sup>b</sup>	WESTERN USSR <sup>c</sup>	WEST CENTRAL USSR <sup>d</sup>	CAUCASUS USSR <sup>e</sup>	EAST CENTRAL USSR <sup>f</sup>	FAR EAST USSR <sup>g</sup>	TOTAL
FIGHTER								
Jet.....	995	1,305	2,820	1,515	1,330	735	1,600	10,300
ATTACK								
Jet (Ftr).....	40	.....	75	.....	.....	90	.....	205
LIGHT BOMBER								
Jet.....	260	325	1,215	55	230	75	365	2,525
MEDIUM BOMBER/TANKER								
Jet.....	.....	270	800	140	25	5	270	1,510
Prop.....	.....	5	45	90	.....	.....	.....	140
HEAVY BOMBER/TANKER								
Prop.....	.....	.....	35	60	.....	10	15	120
TRANSPORT								
Prop (Lt).....	80	120	365	520	65	40	440	1,630
Prop (Med).....	.....	30	175	15	.....	.....	30	250
HELICOPTER								
Light.....	50	65	215	40	.....	10	50	430
Medium.....	.....	.....	.....	30	.....	.....	.....	30
RECONNAISSANCE								
Jet (Ftr).....	45	.....	30	.....	.....	30	.....	105
Jet (Lt Bmr).....	45	50	160	20	20	.....	125	420
Prop (Seapln).....	.....	30	40	.....	.....	.....	40	110
UTILITY/LIAISON								
Jet (Lt Bmr).....	15	15	30	.....	.....	20	30	110
Prop (Misc).....	40	.....	25	.....	.....	.....	.....	65
TRAINER								
Jet (Ftr).....	100	100	200	95	85	50	95	735
Rounded totals.....	1,700	2,300	6,200	2,500	1,800	1,100	3,100	18,700

<sup>a</sup> East Germany, Poland and Hungary.

<sup>b</sup> Northern and Leningrad MD's.

<sup>c</sup> Baltic, Belorussian, Carpathian, Kiyev and Odessa MD's.

<sup>d</sup> Moscow, South Ural, Volga, Voronezh and Ural MD's.

<sup>e</sup> North Caucasus and Transcaucasus MD's.

<sup>f</sup> Turkestan and Siberian MD's.

<sup>g</sup> Far East and Transbaikhal MD's.

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TABLE 5  
ESTIMATED USSR AIRCRAFT STRENGTH BY ROLE WITHIN MAJOR COMPONENTS, 1 OCTOBER 1959

	LONG RANGE AVIATION	FIGHTER AVIATION OF AIR DEFENSE	TACTICAL AVIATION	NAVAL AVIATION	AVIATION OF AIR- BORNE TROOPS	TOTAL
FIGHTER						
Jet.....		4,865	3,905	1,530		10,300
ATTACK						
Jet (Ftr).....			205			205
LIGHT BOMBER						
Jet.....			2,125	400		2,525
MEDIUM BOMBER/TANKER						
Jet.....	1,100		120	290		1,510
Prop.....	140					140
HEAVY BOMBER/TANKER.....	120					120
TRANSPORT						
Prop (Lt).....	210	140	750	145	385	1,630
Prop (Med).....					250	250
HELICOPTER						
Light.....			105	135	190	430
Medium.....					30	30
RECONNAISSANCE						
Jet (Ftr).....			105			105
Jet (Lt Bmr).....			330	90		420
Prop (Seapln).....				110		110
UTILITY/LIAISON						
Jet (Lt Bmr).....			45	65		110
Prop (Misc).....			65			65
TRAINER						
Jet (Ftr).....		290	335	110		735
Rounded totals.....	1,600	5,300	8,100	2,900	900	18,700

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TABLE 6  
ESTIMATED PERFORMANCE OF SOVIET LIGHT BOMBER AIRCRAFT  
(OPTIMUM MISSION PROFILE)

	CURRENT MODELS			POSSIBLE DEVELOPMENTS	
	Beagle	Madge <sup>a</sup>	Bosun	1960 Madge Turboprop	1960 Supersonic <sup>b</sup> Tactical
Combat Radius/Range (nm).....	740/1,400	1,600/3,200	765/1,500	700/2,000	900/1,600 <sup>c</sup>
Bombload (lbs).....	4,400	8,800	4,400	4,400	6,600
Maximum Speed at Optimum Altitude (kts/ft).	460/15,000	195/15,000	470/15,000	275/5,000	705 (Mach 1.23)/35,000
Target Speed/Target Altitude (kts/ft).	385/39,000	130/5,000	400/35,100	200/1,500	610 (Mach 1.06)/43,000
Combat Ceiling (ft).....	43,800	19,500	39,500	20,000	49,400 (57,300 with after-burning).

<sup>a</sup> The Assistant Chief of Naval Operations for Intelligence, Department of the Navy, believes that MADGE has a combat radius/range of 1,200/2,700 nm, a combat ceiling of 18,000 ft., and a maximum speed of 195 kts. at 1,500 ft. In his view there is insufficient evidence to justify the higher figures in the table.

<sup>b</sup> Although the introduction of such an aircraft is possible, we regard it as unlikely (see para. 50, Annex A).

<sup>c</sup> Includes 100 nm supersonic dash radius.

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TABLE 7  
ESTIMATED PERFORMANCE OF SOVIET TRANSPORT AIRCRAFT  
(Calculated in accordance with US Mil C-5011A Spec)

AIRCRAFT OPERATIONAL DATE	CAB * 1937	COACH 1947	CRATE 1955	CAMEL <sup>b</sup> 1950	BULL TYPE * 1956	CAMP 1959	CLEAT <sup>d</sup> 1959	CAT * 1959	COOT 1959	TURBOJET <sup>e</sup> 1960-1962
Soviet Designation	Li-2	Il-12	Il-14	Tu-104		An-8 (Whale)	Tu-114 (Ros-siya)	An-10 (Uk-raina)	Il-18 (Moskyva)	
Power Plants										
Number	2	2	2	2	4	2	4	4	4	4
Type	Piston	Piston	Piston	Turbojet	Piston	Turboprop	Turboprop	Turboprop	Turboprop	Turbojet
Combat Radius/Range (nm/nm)	530/1,210	665/1,335	710/1,560	900/2,050	1,670/3,150	730/1,440	2,500/5,200	665/1,300	1,500/2,800	1,800/3,800
Payload (Troops/Passengers/lbs)	20/15/3,300	21/18/5,000	21/18/4,000	60/50/23,000	42/-/25,700	60/-/20,000	230/120/55,000	125/84/30,000	110/75/27,000	185/100/45,000
Speed/Op. Alt. * (kts/ft)	165/5,000	220/10,000	231/10,000	580/St.	300/20,000	280/17,000	500/20,000	400/28,000	410/27,000	535/20,000
Cruise Speed/Alt. <sup>b</sup> (kts/ft)	130/13,000	165/10,000	140/10,000	430/32,800	198/10,000	230/15,000	400/25,000	300/25,000	315/25,000	425/33,000
Service Ceiling	16,600	26,600	24,000	37,700	39,550	31,000	40,000	33,400	30,000	50,000

\* Soviet version of DC-3.

<sup>b</sup> Transport design based on BADGER. TU-104a is 70 passenger version.

\* BULL (B-29 type) modified for use as transport.

<sup>d</sup> Transport design based on BEAR.

\* Also developed as military transport with ramp-type rear loading doors. Designated CUB (Ap-12).

<sup>f</sup> No prototype has been observed.

\* Normal rated power.

<sup>h</sup> Constant altitude mission.

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TABLE 8  
ESTIMATED PERFORMANCE OF SOVIET HELICOPTERS

AIRCRAFT	HAT	HEN	HOG	HARE,	HOUND	HORSE	HOOK
Operational Date.....	1948	1958	1959	1951	1953	1955	1960
Soviet Designation.....	K-10	K-15	K-18	Mi-1	Mi-4	Yak-24	Mi-6
Power plants							
Number.....	1	1	1	1	1	2	2
Type.....	Piston	Piston	Piston	Piston	Piston	Piston	Piston
AI-4G	AI-4G	AI-14R	AI-14V	AI-26V	ASh-82V	ASh-82T	TV-2VM
Radius/Range (nm).....	35/75	105/230	95/200	85/200	95/200	100/220	100/220
Payload							
Troops.....	None	1	4	2 or 3	16	40	80
Cargo (lbs).....	None	200	750	400-480	3,500	8,800	20,000
Maximum Speed/Altitude							
(kts/ft).....	70/1,000	125/1,000	100/1,000	105/1,000	110/1,000	120/1,000	150/1,000
Normal Speed/Altitude							
(kts/ft).....	60/1,000	95/1,000	80/1,000	85/5,000	100/1,000	100/1,000	110/1,000
Service Ceiling (ft).....	8,200	9,800	10,000	16,400	19,000	13,500	12,500

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TABLE 9  
ESTIMATED OPTIMUM PERFORMANCE OF SOVIET INTERCEPTOR AIRCRAFT \*

(Calculated in accordance with US Mil C-5011A Spec. except that fuel reserves are reduced to permit a maximum of 20 minutes endurance at sea level and aircraft operate at altitudes permitting maximum radius)

	FAGOT	FRESCO A&B	FRESCO C	FRESCO D <sup>d</sup> ALL-WEATHER FIGHTER	FARMER A <sup>e</sup>	FLASHLIGHT A ALL-WEATHER FIGHTER	FACEPLATE <sup>f</sup>	FITTER <sup>g</sup>	FISHPOT <sup>h</sup> ALL-WEATHER FIGHTER	FUTURE ALL-WEATHER FIGHTER <sup>i</sup> 1962
Maximum Speed (kts)										
SL.....	580	570	570	570	680	610	700	800	825	800
35,000 ft.....	530	550	560	560	735	540	895	1,185	1,150	1,400
40,000 ft.....	525	545	555	555	715	535	835	1,150	.....	.....
Combat Ceiling (ft) <sup>b</sup> .....	51,000	53,000	53,000	52,500	61,100	49,300	61,300	60,400	62,000	67,000
w/external fuel.....	50,500	52,000	52,000	51,500	59,700	48,700	59,600	58,800	61,700	.....
Combat Radius (nm).....	280	300	265	265	290	450	215	140	130	200
w/external fuel.....	490	530	505	505	655	530	610	480	440	.....
Time to Climb to 40,000 ft. (minutes) <sup>c</sup> .....	7.6	8.5	8.2	8.2	4.8	7.8	3.8	3.5	2.2	11.7
w/external fuel.....	8.8	11.8	11.5	11.5	7.9	8.4	6.3	5.6	5.0	.....
Armament.....	2 x 23mm. 1 x 37mm.	2 x 23mm. 1 x 37mm.	2 x 23mm. 1 x 37mm.	3 x 23mm. and 32 x 55 mm.	2 x 23mm. 1 x 37mm.	2 x 37mm. and 76 x 55 mm.	3 x 23mm. or 76 x 55 mm.	2 x 30mm. or 32 x 55 mm.	2 x 30mm. and 76 x 55 mm.	2 x 220 mm.
Rockets <sup>j</sup> .....	.....	16 x 55 mm. or 2 x 220 mm.	32 x 55 mm. or 4 x 220 mm.	32 x 55 mm. or 4 x 220 mm.	.....	76 x 55 mm. or 4 x 325 mm.	76 x 55 mm. or 4 x 325 mm.	32 x 55 mm. or 4 x 220 mm.	76 x 55 mm. or 4 x 220 mm.	2 x 220 mm.
Guided Missiles <sup>k</sup> .....	.....	or 2AAM	or 4AAM	or 4AAM	.....	or 4AAM	or 4AAM	or 4AAM	or 4AAM	or 2AAM

\* Unless otherwise noted, performance figures are calculated with internal fuel only.

<sup>b</sup> Highest altitude at which aircraft with standard armament can climb at rate of 500 feet per minute with maximum power.

<sup>c</sup> Data shown at gross take-off weight with military power (afterburner not operating) unless otherwise noted.

<sup>d</sup> Both FRESCO D and E are equipped with airborne intercept radar. However, FRESCO E has no afterburner and has about the same performance as the A and B versions.

<sup>e</sup> Two other versions have been identified, but operational employment in significant quantities of the two later versions has not been indicated. One of the new versions, FARMER B is equipped with airborne intercept radar; the other, FARMER C, is estimated to have significantly improved performance over the A and B models.

<sup>f</sup> It is considered that these are representative of the aircraft which have become operational in 1959, or are expected to do so soon. The exact model or models which will be produced and operationally employed in quantities cannot be ascertained at this time. Performance characteristics are based primarily on analysis of prototypes and may differ in the production models.

<sup>g</sup> Development of this aircraft estimated on the basis of Soviet requirements.

<sup>h</sup> Military power.

<sup>i</sup> Maximum power.

<sup>j</sup> These are considered to be representative loads, presented here for illustrative purposes, and do not exclude the possibility of other combinations of rocket and missile armaments.



TABLE 10  
ESTIMATED PERFORMANCE AND CHARACTERISTICS OF SOVIET EARLY WARNING AND GCI RADARS

TYPE	FREQUENCY (MCS)	EARLY WARNING RADAR			GROUND CONTROL INTER- CEPT RADAR		
		Max. Detection B-47 (Nose-on)	Range <sup>a</sup> (nm) F-100 (Nose-on)	Max. Altitude Coverage <sup>b</sup> (ft)	Tracking B-47 (Nose-on)	Range <sup>a</sup> (nm) F-100 (Nose-on)	Altitude Coverage
KNIFE REST A.....	70-75.....	230	185	180,000	.....	.....	.....
KNIFE REST B.....	80-87.....	265	220	220,000	.....	.....	.....
TOKEN.....	2,700-3,100.....	190	175	75,000	110	100	70,000
BIG MESH							
S-Band.....	2,700-3,100.....	<sup>d</sup> 290	<sup>d</sup> 265	130,000	170	155	110,000
L-Band.....	570.....	290	265	120,000	.....	.....	.....
STRIKE OUT.....	2,700-3,100.....	190	175	120,000	.....	.....	.....
STRIKE OUT/ROCK CAKE.....	2,700-3,100/2,600-2,630.....	.....	.....	.....	185	170	120,000
CROSS OUT.....	2,700-3,100.....	<sup>d</sup> 360	<sup>d</sup> 330	220,000	.....	.....	.....
	570 (est.)	.....	.....	.....	.....	.....	.....
CROSS OUT/STONE CAKE.....	2,700-3,100/2,600-2,640.....	.....	.....	.....	<sup>d</sup> 225	210	220,000
BAR LOCK							
S-Band.....	2,700-3,100.....	<sup>d</sup> 360	<sup>d</sup> 330	220,000	.....	.....	.....
L-Band.....	570 (est.)	.....	.....	.....	.....	.....	.....
BAR LOCK/STONE CAKE.....	2,700-3,100/2,600-2,640.....	.....	.....	.....	<sup>d</sup> 225	210	220,000

<sup>a</sup> In determining these ranges, a 25 percent blip-scan ratio was assumed. As target range decreases, blip-scan ratio increases. At about four-fifths of the stated range, blip-scan ratio would increase to about 50 percent, and at two-thirds the stated range, blip-scan ratio would be about 75 percent. The range at which 25 percent blip-scan ratio is achieved is believed to represent probable maximum detection range. A blip-scan ratio of about 75 percent is believed necessary for close control GCI operations.

<sup>b</sup> Altitude coverage would also be reduced at higher blip-scan ratios.

<sup>c</sup> ROCK CAKE and STONE CAKE are new height-finders deployed with early warning radars for GCI use.

<sup>d</sup> These ranges represent estimated set performance, but may be limited by pulse repetition frequency (PRF) to maximums of 215-220 nm unless the Soviets have evolved techniques for detecting ambiguities in range data and determining true ranges. [ ] data does not reveal whether such techniques are now in operational use.

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TABLE 11  
ESTIMATED BLOC NAVAL STRENGTHS, 1 JANUARY 1960-MID-1964

COUNTRY	YEAR	1 JANUARY 1960									
		FLEET AREA					Total All Fleets				
		Baltic	Northern	Black Sea	Pacific	USSR	Sat.	USSR	Sat.	USSR	Sat.
		USSR	USSR	USSR	USSR	USSR	USSR	USSR	USSR	USSR	Sat. and China
Major Surface Ships <sup>a</sup>											
Heavy Cruisers	1	..	..	2	2	..	5	..	..	1	0
Old Heavy Cruisers	..	..	..	..	..	..	..	..	..	4	5
Light Cruisers	5	..	5	5	4	..	19	..	..	18	10
Old Light Cruisers	0	..	..	1	..	..	1	..	..	1	1
Guided Missile Cruisers	..	..	..	..	..	..	..	..	..	1	..
Destroyers	27	3	27	24	26	4	104	4	4	104	10
Old Destroyers	9	1	5	3	4	..	21	5	..	21	8
Guided Missile Destroyers	2	..	..	2	..	..	4	..	..	24	5
Escorts	8	4	18	16	19	4	61	6	..	74	..
Total	52	8	55	53	55	8	215	15	8	248	10
Submarines <sup>b</sup>											
Long Range New Construction <sup>c</sup>	52	..	98	40	53	15	249	2	15	270	23
Other Long Range	..	..	8	..	2	4	10	..	4	0	40
Old Long Range	2	..	21	1	10	..	34	..	..	0	0
Nuclear (Torpedo)	..	..	..	..	..	..	0	..	..	17	0
Nuclear (Guided Missile)	..	..	..	..	..	..	..	..	..	12	0
										6	..
										10	14

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TABLE II (Continued)

YEAR	FLEET AREA	COUNTRY	1 JANUARY 1960																			
			Baltic		Northern		Black Sea		Pacific		Total All Fleets											
			USSR	Sat.	USSR	Sat.	USSR	Sat.	USSR	Com. China	USSR	Sat.	USSR	Com. China								
		<i>Submarine (Continued)<sup>a</sup></i>																				
		Guided Missile (Conventional Power) <sup>b</sup>			3			3							6							
		Guided Missile (Converted) <sup>c</sup>			2			2							4							
		Medium Range New Const. <sup>c</sup>	30												30							
		Other Medium Range	6												6							
		Old Medium Range	4	1				2	0						7	1	0					
		Short Range	25	6				19	4						48	9	4					
		Old Short Range	3		2			7							27	3						
		Total	122	7	134		67	98	23					421	15	23						

\* In addition to the major surface ships shown, we estimate in mid-1959 there were 1,899 minor surface ships in the Soviet service, and 678 in the Satellites and Communist China. Minor surface ships include amphibious, mine warfare, and patrol ships. "Old" surface ships are those more than 20 years old. "Old" submarines are those 14-20 years old.

• Conventional submarines of post-World War II design and construction, including "W," "Z," and "P" Class long range, and "Q" Class medium range,

<sup>a</sup> Includes 8 units in Mediterranean (Albania).

\* Includes 3 units stationed in the Caspian Sea.

(We estimate that the USSR now has a few nuclear-powered submarines, but there is no evidence to establish that any are now in service with the fleet.

\* Based on estimated earliest operational date of 500–1,000 nm ballistic missile system. Suitable for launching from surfaced or submerged submarine (see Annex A).

Submarines in this category are of the recently identified "G" Class, a long range conventionally powered boat which has been evaluated as a probable ballistic missile launching submarine.

At least four "Z" class submarines were modified probably to launch ballistic missiles. In addition, at least two "W" and/or "Y" Class submarines have been converted to topside stowage of cruise type missiles. Although not observed in the past two years, these two are still included in this table under "Long Range New Construction." For a description of these systems see Annex A. The USSR probably will retain missile launching capabilities with converted submarines during the buildup with new construction missile submarines.

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TABLE 12  
ESTIMATED CHARACTERISTICS AND PERFORMANCE OF SOVIET POSTWAR SUBMARINES \*

CLASS	LENGTH/ BEAM (FT)	DISPLACEMENT (TONS) SUR- FACED/SUB- MERGED	DIVING LIMIT (FT)	ARMAMENT TORPEDO/ MINE	PERFORMANCE—SPEED (KTS)/ENDURANCE (NM)			OPERA- TIONAL RADIUS, NM/ DAYS ON STATION
					Surfaced	Snorkeling	Submerged	
"P" (Long Range)	300/26	1,900/2,280	750	24/48	Maximum..... Cruising.....	18/5,000 10/10,700	12/5,800 8/12,000	18/9 3/190
"Z" (Long Range)	290/26	1,900/2,200	650	24/48	Maximum..... Cruising.....	18/5,100 10/17,200	12/6,000 8/12,400	17/8.5 3/190
"W" (Long Range)	240/22	1,030/1,180	650	14/26	Maximum..... Cruising.....	18/3,800 10/12,000	12/4,000 8/8,300	15/7.5 3/144
"Q" (Med. Range)	185/18	650/740	450	8/12	Maximum..... Cruising.....	15/3,200 10/7,700	11/2,600 8/4,800	15/7.5 3/144

\* No data are available on characteristics and performance of Soviet nuclear-powered submarines, or of the newly identified "G" class conventional-powered submarines.

† These radii are based upon the following arbitrary patrol conditions: each day of transit consists of 12 hours of surface running at 10 knots during hours of twilight and darkness and 12 hours of snorkel running during the day at 8 knots. Fuel consumption on station is based upon submerged running at 3 knots with sufficient snorkeling to maintain batteries.

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TABLE 13  
ESTIMATED SINO-SOVIET BLOC MERCHANT FLEET STRENGTH, 1959-1964

	MID-1959					MID-1964				
	No.	Non-Tanker DWT(cc) *	No.	Tanker DWT(cc)	Total DWT(cc)	No.	Non-Tanker DWT(cc)	No.	Tanker DWT(cc)	Total DWT(cc)
USSR.....	663	2,477,100	99	750,200	3,227,200	889	4,028,400	128	1,226,000	5,254,400
SATELLITES.....	139	684,500	8	102,400	786,900	329	1,622,000	22	282,900	1,904,900
COMMUNIST CHINA.....	107	390,500	10	19,900	410,400	184	674,200	15	47,400	721,600
Totals.....	909	3,552,100	117	872,500	4,424,600	1,402	6,324,600	165	1,556,300	7,880,900

\* Deadweight tonnage cargo capacity—DWT(cc)—is the total weight of cargo which a vessel can carry in full load condition. DWT(cc) is equal to deadweight tonnage (DWT) minus the full load allowance weight of crew, passengers, provisions, fuel, water, and other items necessary for use on a voyage.

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