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SOVIET CAPABILITIES AND PROBABLE COURSES OF ACTION THROUGH 1961

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 and The Joint Staff.

Concurred in by the

INTELLIGENCE ADVISORY COMMITTEE

on 2 August 1956. Concurring were the Special Assistant, Intelligence, Department of State; the Assistant Chief of Staff, Intelligence, Department of the Army; the Director of Naval Intelligence; the Director of Intelligence, USAF; the Deputy Director for Intelligence The Joint Staff; and the Atomic Energy Commission Representative to the IAC. The Assistant Director, Federal Bureau of Investigation, abstained, the subject being outside of his jurisdiction.

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SOVIET CAPABILITIES AND PROBABLE COURSES OF ACTION THROUGH 1961

THE PROBLEM

To examine the political, economic, scientific, and military strengths and weaknesses of the USSR and to estimate probable Soviet courses of action through 1961.

CONCLUSIONS

General

A. The changes in Soviet internal and external policies over the last three years have resulted from the effort of the regime to cope with problems ignored or aggravated by Stalin's arbitrary personal rule, and to develop tactics and methods which the Soviet leaders deem better suited to advancing Soviet interests in a changing world situation. It is not clear where this process of change will ultimately lead; the current Soviet leaders are probably capable of even more flexibility than they have already demonstrated. But they have shown no inclination to depart from the totalitarian character of the Soviet state or to abandon their aim of expanding the Communist sphere of power and their ultimate objective of achieving a Communist-dominated world. *(Paras. 1–3)*

B. We believe that the principal objectives of Soviet policy over the next several years are: (1) to increase the economic strength and military capabilities of the Sino-Soviet Bloc; (2) to weaken the cohesion of the non-Communist world, and particularly to disrupt NATO; (3) to cause a retraction of Western power and influence, and particularly to force withdrawal of US military power from its present deployment around the periphery of the Bloc; and (4) to expand Soviet influence throughout the world by political, economic, and subversive means. *(Para. 158)*

Probable Courses of Action

C. In pursuing these objectives, the Soviet leaders probably intend to maintain for a considerable period the general posture of "peaceful coexistence" with the non-Communist world which they have been developing, especially since the spring of 1955. They will continue the effort to identify Bloc policies with peace, anticolonialism, and social and economic progress, and to label the Western Powers, especially the US, as opponents of these causes. This effort is intended to end the isolation of the USSR and the Communist parties which resulted from Soviet postwar policy, to facilitate Communist political action in popular fronts with democratic groups, and thus to in-

crease Soviet influence in the non-Communist world. *(Paras. 161, 165, 167)*

D. The policy of peaceful coexistence reflects the Soviet leaders' awareness of the dangers of nuclear war inherent in a policy of aggression as well as their appreciation of the political opportunities opened up by their present policy in many areas. Accordingly, we believe that the USSR will try to avoid courses of action which in its judgment would involve serious risk of general war. Nevertheless, insurrection or aggression by local Communist forces might occur if the Communists are presented with opportunities which seem to them to involve minimal risk of large-scale conflict. Such aggression might even become probable if the Communists judge the political condition of the non-Communist world to be such that local aggression would promote confusions and divisions rather than stimulate renewed vigilance and determination. *(Paras. 159, 161, 163)*

E. The issues presented by the Chinese offshore islands and by Indochina appear at present to offer the greatest possibility of a Communist resort to armed action. On both issues the Communists might hope to justify resort to military action on grounds that would be accepted by considerable elements of world public opinion, and moreover might expect that the US would be deterred from armed intervention by the opposition of its allies and by the fear of alienating some important states of Asia. For the present, however, the USSR apparently intends to curb tensions surrounding both issues, while encouraging by diplomacy and propaganda a gradual erosion of Western resolve to oppose Communist expansion in these areas. *(Para. 178)*

F. The underdeveloped countries have emerged in the last year as particular targets of the new Soviet policy. We believe that the USSR will vigorously pursue its recently expanded efforts to establish wider economic as well as political relations with these countries. Estimated Soviet industrial production would permit considerable increases in exports of capital equipment and military end items without appreciable adverse effect on internal Bloc programs, and even with some economic advantage. *(Paras. 31, 60–63, 165b-c, 167)*

G. In particular, the USSR will almost certainly persist in a vigorous effort to displace Western influence in the Middle Eastern and adjacent African states and to align them with the Bloc. The USSR is using the Suez controversy and the Arab-Israeli conflict to enhance its influence in the Arab world. We believe, however, that the Soviet leaders recognize that vital Western interests are so deeply involved in the area that the USSR would be courting major political and possibly military risks if it supported the Arabs in violent courses of action affecting either issue. *(Paras. 179–182)*

H. In Europe, the USSR will not relax its efforts to frustrate West German rearmament and to weaken NATO ties and defense efforts. On the central problem of Germany, we believe that for at least the next several years the USSR will insist on maintaining the division of the country. For some time to come the Soviet leaders will probably consider that even neutralization would not provide sufficient assurance against a reunified Germany's tacit alliance with the West. *(Paras. 172–174)*

Internal Political Developments

I. At least for the time being, the problem of providing a continuing effective leadership in the Soviet state to replace Stalin's one-man rule has apparently been resolved. Despite the evident primacy of Khrushchev, there seems to be a collective participation in policy formulation by at least the small group in the Communist Party Presidium. A key feature of this "collective leadership" is the apparent denial of control over the police power to any single leader. No firm estimate can be made as to whether the present apparent stability within the top leadership will continue indefinitely or whether one or another figure will eventually emerge in something like the absolute position held by Stalin. But even if a struggle for power should occur, we believe that it would be resolved without open violence and without basically weakening the regime's control. *(Paras. 4–8)*

J. The recent repudiation of Stalin marks a new phase in the regime's attempt to convince the Soviet people, and world opinion as well, that it has departed from the evils of Stalin's rule. By providing greater security against police abuses, permitting broader contact with the non-Soviet world, and otherwise easing somewhat the conditions of life in the USSR, the regime is attempting to cultivate more favorable attitudes towards itself and its goals. It is particularly interested in soliciting initiative on the part of the professional classes and party officials in order to advance its current efforts for greater economic efficiency and productivity. However, the attempt to strike a new balance between coercion and freedom has not involved any weakening of the means of control, including the police apparatus. We believe that the regime could return to Stalin's harsher discipline, though at the cost of some disillusionment which would hamper it in the achievement of its goals. *(Paras. 11–19)*

Soviet Military Strength and Capabilities

K. There will probably be a decrease in the personnel strength of the USSR's active military establishment. The announced reductions, which we believe would affect principally the ground forces, may reduce over-all active strength to about three million men, and possibly somewhat lower. However, the over-all effectiveness of Soviet forces for modern warfare will continue to increase, primarily due to the improved weapons becoming available in quantity, to changes in organization, and to adaptation of doctrine and tactics designed to fit Soviet forces for nuclear warfare. *(Paras. 98–101)*

L. Current and prospective military programs are likely to result in the following principal developments affecting Soviet military strength during the next five years:

1. The USSR's nuclear stockpile, ranging from very low-yield weapons to high-yield thermonuclear weapons, will continue to grow rapidly. The upward revision[1] of our estimates of Soviet fissionable materials production and the Soviet test of a multimegaton weapon lead us to conclude that the USSR now has a significant multimegaton capability and will soon have a major one. *(Paras. 76–81)*

[1] See the footnote by the Director of Naval Intelligence to Paragraph 76.

2. We estimate that the USSR now has about 1,300 aircraft in its Long-Range Air Force, including 35 BISON jet heavy bombers, 30 BEAR turbo-prop heavy bombers, 475 BADGER jet medium bombers, and 760 BULL piston medium bombers. Based on a judgment as to what Soviet planners probably estimate their requirements to be, and on recent increases in the number of air regiments, we now estimate that the USSR is building toward a force of about 1,500 modern bomber-type aircraft by mid-1960. We also believe that in the light of probable Soviet optimum requirements, including those for attack on the continental US, a likely composition of this force would be about 800 jet and turbo-prop heavy bombers and 700 jet medium bombers.[2] Many unknown factors, for example the degree of future Soviet success in the guided missile field, could lead to Soviet decisions which would alter both the size of this force and the balance between types of aircraft. Long-Range Aviation will probably acquire improved base and staging facilities and a substantial inflight refueling capability. By 1961, a new medium bomber with "supersonic dash" capabilities may be introduced. *(Paras. 115–118)*

3. At present, the USSR could have a small number of ballistic missiles with ranges up to 900 n.m. These could carry small and medium-yield nuclear warheads, and in the period 1958–1959 could be fitted with high-yield nuclear warheads. By 1958–1959, the USSR could also have a small number of intermediate-range ballistic missiles (1,600 n.m.), and by 1960–1961, a small number of intercontinental ballistic missiles. *(Para. 139)*

4. The USSR will considerably strengthen its air defense capability, including by 1961 a fighter force more than 50 percent equipped with all-weather types, improved electronic equipment, and improved guided missiles and warheads. *(Paras. 79, 113, 140–142)*

5. A substantial increase will probably take place in Soviet submarine strength, which is now estimated at 445 vessels, about half of them being medium and long-range craft of postwar design. Submarine building rates will probably continue to increase through 1957 but decrease in 1958 due in part to the impact of the nuclear-powered submarine program and the probable adaptation of present submarines to missile weapons systems. If the estimated 1958 rate were maintained through the rest of the period, this would result in a mid-1961 force of approximately 900 submarines of all types, including about 800 long and medium-range boats of postwar design. However, we have no intelligence to indicate planned future Soviet submarine strength. The Soviet Navy will probably also acquire surface vessels equipped to launch guided missiles. *(Paras. 120, 122, 124)*

6. Soviet Army ground forces are being modernized to achieve improved firepower, mobility, and combat effectiveness for both nuclear and non-nuclear warfare. They are being supplied with a wide variety of new weapons and equipment, and will probably acquire guided missiles and tactical nuclear weapons. *(Paras. 103, 108)*

[2] The Assistant Chief of Staff, Intelligence, Department of the Army, believes it unlikely that a force of this magnitude and composition would be developed. See his footnote to Paragraph 115.

M. The size and composition of the USSR's military establishment will be subject to further modification as the period advances and the Soviet leaders reappraise their military requirements and strategy in the light of the capabilities of the new weapons, the world balance of military forces, and the international political situation. We believe, however, that the Soviet leaders will continue to maintain formidable military power as a basis for their policy and to meet political and military contingencies. They will almost certainly not submit their military programs to the constraints of a comprehensive system of international inspection and control. Soviet capabilities for nuclear or nonnuclear warfare of large or small scale, including direct attack on the US, will increase considerably by 1961. *(Paras. 94–95, 169)*

Developments in the Soviet Economy

N. We now estimate that the present high rate of Soviet economic growth will decline only slightly by 1961, when it will still exceed six percent per year. As a result, Soviet gross national product (GNP) in 1961 will be nearly 50 percent above its 1955 level or about 45 percent as large as the projected US GNP; in 1955 it was about 37 percent as large as the actual US GNP. Since Soviet defense expenditures, despite the new weapons programs in prospect, will probably increase less rapidly than GNP over this period, the relative military burden on the economy should decline slightly.[3] *(Paras. 32–34, 37)*

O. Present Soviet economic policy clearly envisages continued high priority for heavy industry, and we estimate that such production will increase by 70 percent or more during the next five years. The probable reduction in military manpower will facilitate this growth by providing additions to the labor force. Agricultural production will grow more slowly, probably increasing by about one quarter; such growth would provide the basis for a continued improvement in material welfare. *(Paras. 27, 29, 40, 43, 53, 55)*

P. Soviet scientific and technical capabilities continue to expand rapidly. Soviet industrial technology has demonstrated that it is able to adapt and introduce the most advanced methods of production, although the average level of Soviet practices still lags considerably behind that of the West. Moreover, the USSR almost certainly has the scientific and technological capability necessary to develop weapons and military equipment which are generally equal to those of any other nation, and in the technological race there are times when in certain fields the USSR may well be ahead of the US and times when the US will outstrip the USSR. *(Paras. 64, 72, 75)*

[3] The Assistant Chief of Staff, Intelligence, Department of the Army, does not concur in the cost study upon which this conclusion is based. He does not believe that there is sufficient information available to estimate the relative military burden on the Soviet economy. See his footnote to Appendix B.

See also the footnote by the Director of Naval Intelligence, attached to Appendix B.

DISCUSSION

INTRODUCTION — SOVIET DEVELOPMENTS IN PERSPECTIVE

1. The three years since the death of Stalin have seen much change on the Soviet scene. The men who succeeded him have adopted external policies which they deem to be better calculated to advance Soviet world interests, and internal policies which they consider more adroit for maintaining the Communist Party's control of the governmental machinery and of the population. This development has reflected their awareness of a changing world situation which had outmoded some of the tactics and policies pursued in the postwar period. In part, also, change in the USSR has probably been a consequence of long-term trends related to rapid industrialization, the spread of general education, and the creation of new social classes. The present leaders have sought to release Soviet domestic and foreign policy from the more rigid mold in which Stalin had cast it. Their modifications in his system have caused the Soviet scene to lose some of the static character it had acquired under the former dictator. It is not yet clear where this new Soviet flexibility will ultimately lead, but the fact of its emergence has become evident. To assess the problems confronting US policy it has become as important to focus on what is changing as on what is constant in the Soviet challenge.

2. Stalin's successors were confronted with the urgent problem of governing effectively a totalitarian empire whose whole functioning was based upon the absolute power of one man. In addition, they were confronted with a number of problems in both internal and foreign policy which Stalin had either ignored or aggravated. Though the resulting process of review and adjustment is likely to continue, an important stage in that process was reached at the Twentieth Party Congress of the Soviet Communist Party in February 1956, where the new leaders presented their policies and programs in comprehensive fashion. They also demonstrated their intention to effect changes by their move to discredit many aspects of Stalin's regime and to reduce drastically his historical stature. As will be evident from the different sections of this paper which follow, the effort to correct abuses and errors in Stalin's system has affected almost every aspect of Soviet internal and external policy.

3. To date, however, the post-Stalin leaders have shown no inclination to depart from the totalitarian character of the Soviet state. Rather they are seeking to organize and develop the power of the system more effectively and to adapt it to changing conditions. Nor has the present leadership departed from the Communist conviction that the struggle between the Communist and non-Communist worlds will continue. It adheres to the fundamental Communist objectives of destroying free states and expanding the Communist sphere of power. Although the Soviet leaders are now relying more upon political and economic action than upon force or the explicit threat of force, they are pursuing their goals with undiminished vigor and apparently with high confidence. None of the changes that have come about on the Soviet scene since Stalin's death, important as these have been, suggest that the threat which Soviet and Communist power and purposes pose to the free world is likely to diminish during the period of this estimate.

I. INTERNAL POLITICAL DEVELOPMENTS

"COLLECTIVE LEADERSHIP"

4. Stalin's power had become so absolute that all organs of party and state were subject to his personal control. Upon his death, his successors were confronted with the problem of reconstituting the supreme authority in the Soviet structure of power. The Presidium of the Communist Party Central Committee became the repository of the dictatorship. This 11-man body continues to exercise absolute power, and despite the more frequent meetings of the 133-man Central Committee and other Party bodies, the Presidium is clearly the initiator of policy and the final focus of decision.[4]

5. The Soviet leaders describe the arrangements which obtain at the highest level of power in the Presidium as "collective leadership." We have little specific information on the relationships among the highest Soviet leaders, but it is clear that these men are not of equal stature and authority. Khrushchev's public prominence and his hold on the key position of Party First Secretary, by means of which he has apparently been able to assign many of his proteges to important party and state posts, suggest that he is the dominant figure. For the present, however, whether as the result of a balance of forces among the top leaders or of a voluntary agreement among them, there do appear to be limits to Khrushchev's power, and there is apparently collective participation in policy formulation.

6. A key feature of the relationship among the top leaders is the apparent subjection of the police power to collective control. Such an arrangement would be plausible, since it was Stalin's manipulation of the police power which enabled him to physically liquidate his opponents and brought about the excesses of the purge period. The present leaders, out of concern for the continuity and stability of the Soviet state itself, as well as for their individual safety, would probably not wish to see such a period return. The very great stress given at the Twentieth Congress to the "collective leadership" formula as the original and correct party doctrine, which Stalin's "cult of personality" had allowed to fall into neglect, suggests that forces are at work to prevent the re-emergence of one-man rule.

7. We cannot estimate with firmness whether the present apparent stability within the top leadership will continue or whether one or another figure will emerge again in something like the absolute position held by Stalin. Even with collective control of the police power, there will almost certainly continue to be factional divisions, intrigues for position and influence, and disputes over policy. "Collective leadership" might break down over a fundamental divergence of view on some issue deemed crucial to the security or development of the Soviet state, or as the result of an attempt by one or a few members to acquire supreme power. Even if a struggle for supreme power should occur, we believe that it would be resolved (as in the elimination of Beria and the demotion of Malenkov) without open violence involving large-scale use of police or military organs, and without weakening the regime's control.

8. The members of the Presidium not only appear to be sharing the policy-making power, but apparently are trying to bring to bear on their problems greater realism and more expert knowledge. They have apparently broadened the circle of consultation, at least concerning the technical and practical aspects of policy. We believe that Soviet foreign policy, economic planning, and military programs are now more strongly influenced than formerly by the advice of specialists in these fields. This apparent freer participation and greater responsibility of professionals and experts has been one of the strengths of the post-Stalin regime. This development has probably greatly improved the morale of higher officials in the Party, government, and armed forces.

[4] An organizational chart of the Soviet Party and Government appears on the following page.

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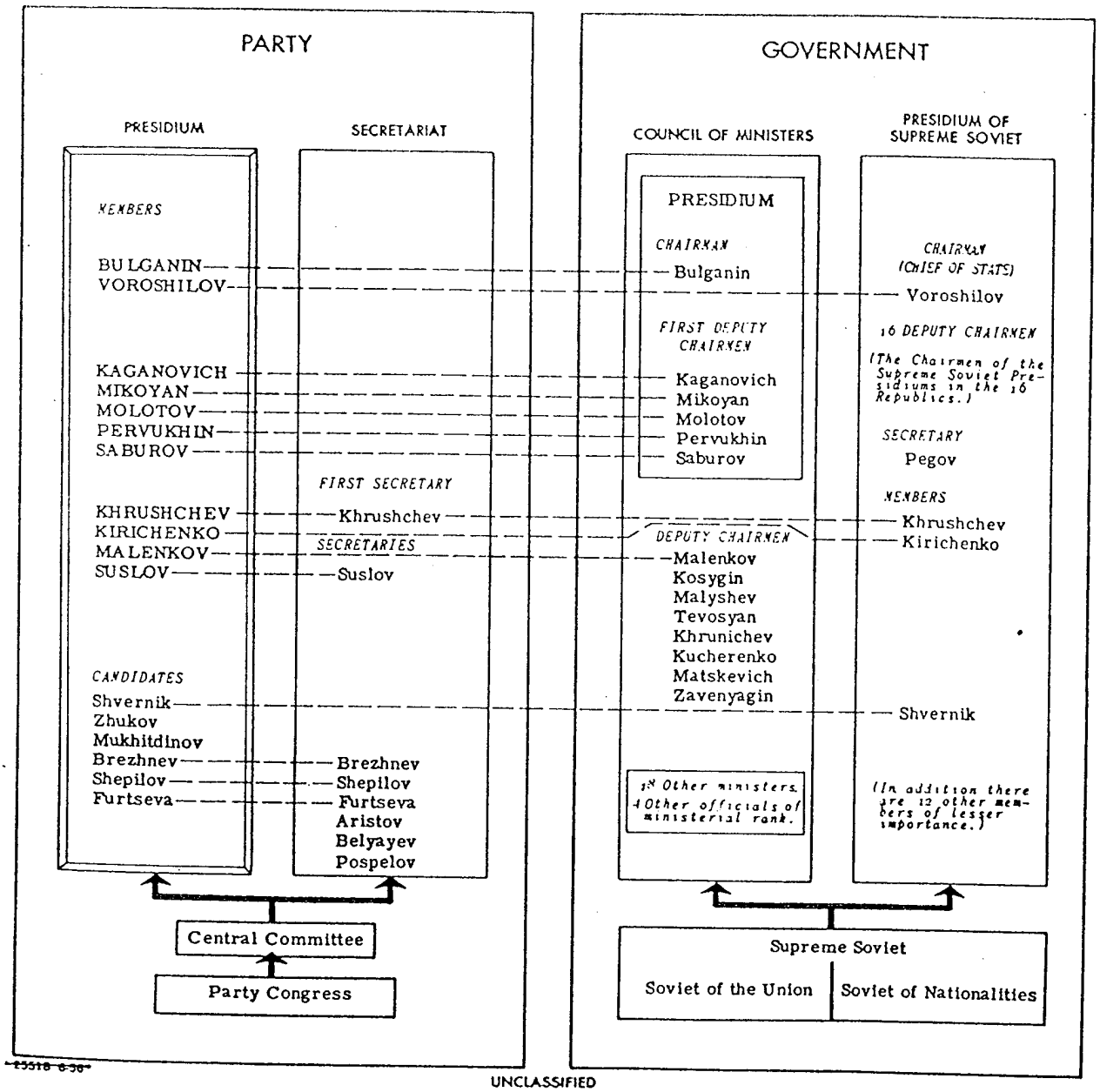
U S S R
PARTY AND GOVERNMENT ORGANIZATION



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PARTY REFORM

9. Beyond the stabilization of power at the very top level, one of the most important objectives of the new leadership has been to restore function and vitality to the whole structure of the Communist Party itself. The new leaders have apparently felt that Stalin's personal absolutism was causing the Party to degenerate into bureaucratic ineffectiveness. They regarded a revival of Party activism as necessary to make the Party a more effective instrument of policy implementation and mass persuasion, as well as to place themselves in closer touch with popular attitudes. Accordingly, the Central Committee and Party Congress are meeting at intervals prescribed by Party statutes. Local Party organizations are required to meet regularly and to adopt the "collective leadership" practiced at the top. There is renewed emphasis on practical criticism from below. The redefinition of Party doctrines and tactics at the Twentieth Party Congress in closer conformity with political realities, internal and external, was probably also designed to contribute to a revival of Party spirit.

10. The drive to revitalize the Party has taken place under the slogan of a return to "Leninist norms of Party life." The myth surrounding the name of Lenin, to which the new leaders have particularly attached themselves, probably in part to establish the legitimacy of their succession and in part to justify the changes being made in Stalin's system, has come to include the assertion that there was genuine "Party democracy" in Lenin's time. There was in fact freer discussion within the Party while Lenin lived and for a few years thereafter. But even under Lenin "Party democracy" meant that debate and criticism was combined with strict discipline from the top. The new leadership, in dealing with the Leninist concept of "Party democracy," has indicated that it will not permit criticism to impair discipline.

RELAXATION OF INTERNAL TENSIONS

11. The claim of the leadership that it is reviving Party democracy reflects an acute awareness of one of the serious problems facing the regime. The new leaders evidently believe that Stalin's policies of coercion and unpredictable terror, even against the Party itself, had done much to paralyze active participation and initiative. This was true not only within the Party but also within the government and economic administration and in the fields of art and science as well. Coercion was no longer believed to be the best way of achieving the regime's goals and Stalin's death provided an opportunity to alter his methods of obtaining compliance. The size and complexity of the Soviet economy and the problems of increasing productivity and improving technology called for more responsibility and initiative on the part of managers, bureaucrats, and Party officials, as well as more cooperative attitudes on the part of the general population.

12. Behind many of the regime's moves in the post-Stalin period lies an attempt to strike a new balance between coercion and initiative, between discipline and freedom, more conducive to the attainment of the goals of the Soviet state. These moves have included the amnesty of many persons sentenced to labor camps, an easing in some degree of the forced labor system, increased security of the citizen against arbitrary arrest, broader cultural exchanges with the West, and measures designed to continue a gradual rise in standards of living. Industrial managers, scientists, intellectuals, and professional people of all kinds have been the principal beneficiaries of these developments. But there are also signs that the Soviet people as a whole may be acquiring a more favorable attitude toward the regime as a result of slowly improving material conditions and the increase in personal security. There is apparently a widely held opinion among the Soviet people that their lot is improving. This probably represents a considerable psychological gain for the regime as compared with Stalin's last years, and eases the task of the Soviet leaders in solving their current internal problems.

13. On the other hand, the regime has not lost freedom of action vis-a-vis the Soviet people. It has control of the whole apparatus of police power, although this apparatus has been moved somewhat into the background.

It has not made any irretrievable concessions and could impose on the Soviet people any course that it chose. But the mere fact that the new Soviet leaders have made gestures toward appeasing the Soviet people is a source of possible future difficulty. While they would not need to anticipate anything approaching a loss of control over the Soviet people if they returned to Stalin's harsher discipline, they could do so only at the cost of a measure of disillusionment and alienation which would hamper them in the achievement of their goals. The cost in these terms of such a reversion would probably increase the longer the present milder policy was continued.

THE ANTI-STALIN CAMPAIGN

14. The intention to reduce the Stalin myth in some degree was manifest throughout the three-year period following the dictator's death. It was evidenced by emphasis on collectivity in leadership, by efforts to rebuild Lenin as the greater figure, and by growing attacks on the "cult of personality." This campaign led finally at the Twentieth Party Congress to attacks on Stalin himself, both implicit and explicit. We believe that this was the result of a deliberate decision by the leadership.

15. There were probably several motives behind this decision. The Soviet leaders probably believed that the move would advance their current foreign policy in many respects. The attacks on Stalin were intended to blur the image of aggression and subversion which had become associated with Soviet policy, and to give the Soviet regime an appearance of respectability. The Soviet leaders probably estimated that the effects would be felt not only in neutralist countries but even in states belonging to the Western alliance.

16. However, considerations relating to internal developments were almost certainly primary. The new leaders wished to repudiate Stalin's use of terror against the Soviet people and especially against the Party, to set up obstacles to a return to one-man rule, and to confirm the ascendancy of the Party as an institution. Moreover, they apparently found it desirable to eliminate the absolute authority attached to Stalin's past pronouncements in order to attain the desired flexibility in carrying out their new programs. The leadership probably hopes by these means to give the regime continuity and stability, and to free it from the hazards of a struggle for power to which a totalitarian state is subject.

17. Beyond this, there were probably motives which related to the attempt to improve the relationship between the regime and the people, by relying less on coercion and more on a voluntary response to attain the regime's goals. Probably the leaders felt that a dramatic demonstration such as the direct attack on Stalin was necessary to win confidence in the genuineness of their intention to solicit initiative, eliminate the abuses of Stalin's system of terror, and improve the material lot of the Soviet people.

18. There are clearly some risks for the regime in the reduction of so authoritative a myth as that surrounding Stalin. These arise from the implication that Communist authority, including that embodied in the present leaders, lacks the integrity and omniscience which it has always claimed for itself. The present emphasis given to the Party as the real embodiment of authority and wisdom is intended to counter this danger. The essence of Stalin's errors is said to be that he placed himself above the Party. Among the population generally and especially among youth this rationalization has apparently failed to carry complete conviction and there has been some disillusionment, though this is probably temporary. On the other hand, there are millions of ordinary Soviet people who have personal knowledge of the injustices practiced in the Stalin era and who can be persuaded of Stalin's responsibility even though many may not absolve the present leaders of complicity. Among elite groups such as higher Party members, economic managers, government officials, and the professional military, the move has apparently won approval, partly because they have intimate knowledge of Stalin's abuses, and partly because they welcome the promise of greater professional opportunities and enhanced security under the new leadership.

19. We believe that over the long run the regime will continue to be confronted with the problem of obtaining the benefits of a greater measure of individual initiative and responsibility within the framework of a totalitarian system. It will probably not be willing to depart very far from the methods which Stalin developed for the manipulation of power in the Soviet state. Probably the attempt to strike a new balance between discipline and initiative will either fall short of winning sufficient response or it will evoke trends which the regime will regard as unacceptable and requiring new measures of coercion.

II. THE USSR'S RELATIONS WITH OTHER COMMUNIST BLOC STATES

20. The unique authority of Stalin as a "world historical personality" was a factor in the close integration of the Communist Bloc. His death probably required some redefinition of relations between the Bloc states on a less personal basis, although this was certainly less true of the USSR's relations with Communist China than of its relations with the East European regimes. We believe that despite some friction and confusion, especially in the European Satellites, the transition will be completed without serious disruption. Throughout the period of this estimate the Sino-Soviet Bloc will probably maintain its solidarity of interest and coordination of policy.

SINO-SOVIET RELATIONS

21. The concert of action between the USSR and Communist China has remained strong. Close coordination has been evidenced in the campaign for increasing friendship and economic relations with non-Bloc nations. The intensity of Communist China's campaign to "liberate Taiwan" has been moderated, probably in accordance with Soviet tactics to "reduce international tensions." The Chinese Communists have frequently not followed the Soviet model on aspects of internal policy, but we believe that these divergences will not impair Sino-Soviet relations. The Chinese Communists continue to acknowledge frankly their dependence on Soviet aid and advice. The Soviet commitment to aid China's high priority program of industrialization was recently extended well into China's Second Five-Year Plan (1958–1962) at about the same annual level that has prevailed for the last five years.

22. We believe that the USSR and Communist China will continue to be closely linked not only by ideological bonds, but by common hostility to the US, by an interdependence involving Communist China's manpower and strategic location and the USSR's industrial and technical capabilities, and by the advantages of concerted diplomatic and economic activities. There probably are and will continue to be points of friction in the relationship, but not of such importance to either party as to overbalance the joint interest in maintaining it, or to permit outside influence to affect it basically. Peiping's continued dependence on Moscow for arms, industrial resources, and technical assistance will probably give Moscow's views the greater weight on major questions of global policy. But Peiping's growing strength and prestige as an Asian power will probably give it increasing potential for influencing Moscow on Asian issues.

SOVIET-SATELLITE RELATIONS

23. The current Soviet leaders apparently believe that Stalin's policy of dictation from Moscow of virtually all aspects of Satellite affairs was not to the over-all advantage of the USSR. They apparently blame the excessive rigidity of Moscow's control under Stalin for Yugoslavia's loss to the Bloc, although they probably believe that no other Satellite would be able to follow Yugoslavia's course. They apparently feel that a somewhat looser rein in internal matters which takes account of national differences and local problems will result in a sounder and more effective relationship. At the same time, such actions as the dissolution of the Cominform and the rehabilitation of Satellite leaders purged for nationalist deviation, which have the effect of depicting the Satellite regimes in an apparently more independent role, are useful steps in support of the USSR's current tactics in foreign policy. The appearance of a relaxation of Soviet control in the Satellites not only suits the general "relaxation of tensions" theme, but it bears directly on the campaign to bring Yugoslavia back into the Bloc and on the effort to obtain contact and ultimately a "popular front" alliance with Socialist parties throughout the world.

24. The general direction in which the redefinition of the Soviet-Satellite relationship is moving now appears somewhat more clearly. There is apparently to be a much greater degree of inter-Satellite cooperation, although

inter-Satellite arrangements will still be under Moscow's ultimate control. The Satellite regimes are being permitted to expand economic relations with the West, thus increasing their own industrial and trading effectiveness. Concessions are also being made to Satellite national sentiment. They are no longer obliged to sacrifice their own prestige by applauding all things Soviet. Recent changes in Satellite leadership, the new, though discreet, emphasis on the existence of "separate national roads to socialism," and the withdrawal of the charges of deviation against Yugoslavia are further steps in this direction. The picture which emerges, if present trends continue throughout the period of the estimate, is one in which the Satellite regimes will enjoy a real if limited autonomy in domestic affairs, and one in which their dependence on Moscow will be more effectively masked.

25. There are some risks for the USSR in this post-Stalin course, particularly in the possibility of exaggerated expectations in the Satellites. By permitting an atmosphere of expectant change to develop, Bloc leaders will probably stimulate new nationalist and reformist sentiment, even within the Satellite parties themselves, which could exceed the level that they anticipated or could safely allow. In the course of reversing Stalinist policies, particularly toward Yugoslavia, the USSR has weakened and in some cases destroyed the position of competent and dependable leaders. On the other hand, by seeking to maintain in power many of the leaders who were identified with Stalinist policies, the USSR risks disillusioning those who believed in its promises of greater independence and respect for national differences. Finally, the new policies will introduce a new element of complexity in Soviet-Satellite relations, with age-old controversies in Eastern Europe and differences in national tradition and temperament almost certainly increasing in importance.

26. Nevertheless, the basic instruments of Soviet domination — a core of Communist careerists whose first loyalty is to Moscow, the functioning of Soviet advisers at key points in the Satellite armies and police systems, the substantial economic dependence of the Satellites on the USSR imposed by Soviet-directed economic plans, and the presence or proximity of Soviet armed force — will remain. Dissatisfaction among the Satellite populations will continue and, in the short run, may even increase and dramatize itself in sporadic protest movements. Over the longer run, if the regimes find it possible to combine somewhat less stringent economic policies with effective discipline, an increasingly resigned and accommodating attitude may emerge among the Satellite populations. However, if active opposition should increase, we believe that the regimes would employ whatever measures were necessary to maintain themselves in power, even at the cost of abandoning their current effort to conciliate the populations under their control.

III. DEVELOPMENTS IN THE SOVIET ECONOMY

ECONOMIC POLICY

27. Soviet economic policy continues to be directed toward the most rapid possible growth of the economy. The aim, stated at the 20th Party Congress, of overtaking the US in production, underscores this policy and projects it well beyond the period of this estimate. The USSR conceives of this competition primarily in terms of heavy industrial output. Thus other sectors of the economy tend to be developed only to the extent that they support or at least do not hamper the growth of heavy industry.

28. *Post-Stalin Policies.* While in this most basic respect the present leaders have not altered Stalin's policy, they have apparently decided that several aspects of this policy were producing diminishing returns or even becoming self-defeating. First, agricultural stagnation in the face of general population growth, and an even faster urban increase, focused attention upon the future adequacy of the food supply, upon the wasteful use of human and other resources in agriculture, and upon the need for a better diet. Secondly, the decline which the Soviet leaders probably anticipated in numbers of new industrial workers called for strenuous efforts to increase individual productivity if planned economic growth was to be achieved. Policy innovations since 1953 have concentrated upon resolving these problems in order to insure further advances in heavy industry.

29. *The Sixth Five-Year Plan.* Soviet economic policy for most of the period of this estimate is outlined in the Sixth Five-Year Plan (1956–1960), which was announced in January 1956 and approved by the 20th Party Congress in February. This plan, like its predecessors, stresses industrial growth, calling for a 65 percent increase in industrial output. A high rate of investment is to be maintained, still directed primarily into heavy industry. This overriding claim upon Soviet resources, plus the requirements of the defense program, means that the growth in consumption, although it will probably be considerable, will continue to lag behind the growth in total output.

30. However, since future growth also depends upon agricultural progress, the manifold attack on the agricultural problem will continue, involving the New Lands and corn schemes, better farming practices, higher investment priority, improved income incentives for collective farms and farmers, and stronger political controls. The increases in food and fiber output likely to be achieved should assist industry by raising worker morale. However, increases in consumption on the scale currently promised will not occur until the USSR achieves much more substantial increases in agricultural output than we now estimate to be likely. Gains in industrial productivity will be sought primarily through further professional and worker training, new methods of organization and management, and introduction of the latest foreign and domestic technology, including some re-equipment.

31. The policy of expanding trade with underdeveloped countries, facilitated by offers of credit on easy terms, was accelerated sharply in 1955, and the USSR clearly intends to press this policy vigorously. The present level of industrial output and that which we estimate for the next five years will permit considerable increases in the currently small Soviet exports of capital equipment to countries outside the Bloc without appreciably affecting domestic programs. This factor, coupled with the availability of obsolescent materiel as a result of the Soviet re-equipment program, would permit substantial increases in Soviet exports of military end-items. By exporting capital goods and military end-items, the USSR could obtain foodstuffs and raw materials in short supply or costly to produce at home, and thus expect economic gains as well as political advantages.

ECONOMIC GROWTH

32. The gross national product (GNP) of the USSR grew by an estimated 41 percent during

the five-year period 1951–1955, an average annual increase of about 7 percent.[5] We estimate that during the six-year period 1956–1961 Soviet GNP will grow at nearly the same annual rate and in 1961 will be almost 50 percent higher than in 1955. This growth will come chiefly from a further rise in the already high rate of capital investment, rapid gains in productivity, and substantial although slightly diminishing additions to the labor force. The rate of growth of industrial production will slacken off somewhat, but agricultural output will probably grow about twice as fast as in the 1951–1955 period.

33. The growth rate estimated above is higher than that projected in NIE 11–3–55 (published 17 May 55). Whereas the previous estimate foresaw an increase of GNP of 42 percent in 1960 over 1954, with the growth rate falling to slightly less than 5 percent in the final year, it now appears that the GNP in 1960 will be about 50 percent above 1954, and that even in 1961 the growth rate will still exceed 6 percent. This revision is based upon the considerable amount of new data which has become available in recent months and which has led us to revise upward our previous estimates of the growth of consumption and therefore of GNP for the Fifth Five-Year Plan; upon the strong growth trends observed during 1955; and, most importantly, upon an analysis of the Sixth Five-Year Plan which persuades us that most of the major industrial targets will be fulfilled. The planned reduction in the armed forces, if largely carried out, will alleviate labor shortages, probably the most serious hindrance to achievement of these goals.

34. The growth rate of Soviet GNP is nearly twice that experienced by the US economy during the past five years and anticipated in the coming period. As a result, the relative size of the Soviet economy increased from about one third of the US economy in 1950 to about 37 percent in 1955 and will probably reach about 45 percent in 1961. However, the absolute gap between the two economies will continue to widen over this period. Roughly similar relationships obtain between the total outputs of the US and the NATO countries on the one hand and the Sino-Soviet Bloc on the other. (See Figure 1.) Based solely on a projection of present trends, the absolute gap between the Soviet and US GNPs would reach its widest point in the second half of the 1960's and would then begin to narrow.

Distribution of GNP

35. In utilizing its growing output, the USSR will continue to increase the share devoted to investment. We estimate that investment allocations will rise from about 26 percent of GNP in 1955 to about 31 percent in 1961. (See Figure 2.) Because of the growth in GNP over this period, investment will be about 78 percent larger in the later year. Consumption will probably grow by about 40 percent, in part because of continued urbanization, though its relative share of GNP will fall from about 57 to about 54 percent. (For prospective increases in per capita consumption, see Paragraph 55.) In contrast, the US in 1955 devoted about 66 percent of its GNP to consumption and 20 percent to investment.

36. In US prices, Soviet investment in 1955 was about $38 billion, or about 54 percent of US investment, while consumption was about $63 billion, or 24 percent of US consumption and about one fifth on a per capita basis. The dollar value of total defense expenditures in 1955 was about $37 billion, or virtually 100 percent of US defense expenditures.

[5] The task of estimating Soviet GNP is complicated not only by incomplete data but by conceptual difficulties as well. The present estimates have benefitted from the increased statistical data made available in recent Soviet announcements, although important gaps remain, particularly in the military sector, as Appendix B indicates. Of the conceptual problems, the most important relates to the composition of GNP by end use and arises from the absence of rental payments and capital charges in Soviet agriculture. This has been resolved by imputing a value from analogous relationships in the US economy. Since this rough procedure accounts for about 26 percent of our base-year estimate of Soviet consumption, the results can make no claim to complete accuracy. Despite this and other difficulties, however, we regard these estimates as a reasonably correct statement of the size, composition, and growth of the Soviet economy.

FIGURE 1

COMPARISON OF GROSS NATIONAL PRODUCTS

(In Billions of 1955 Dollars at Market Prices)

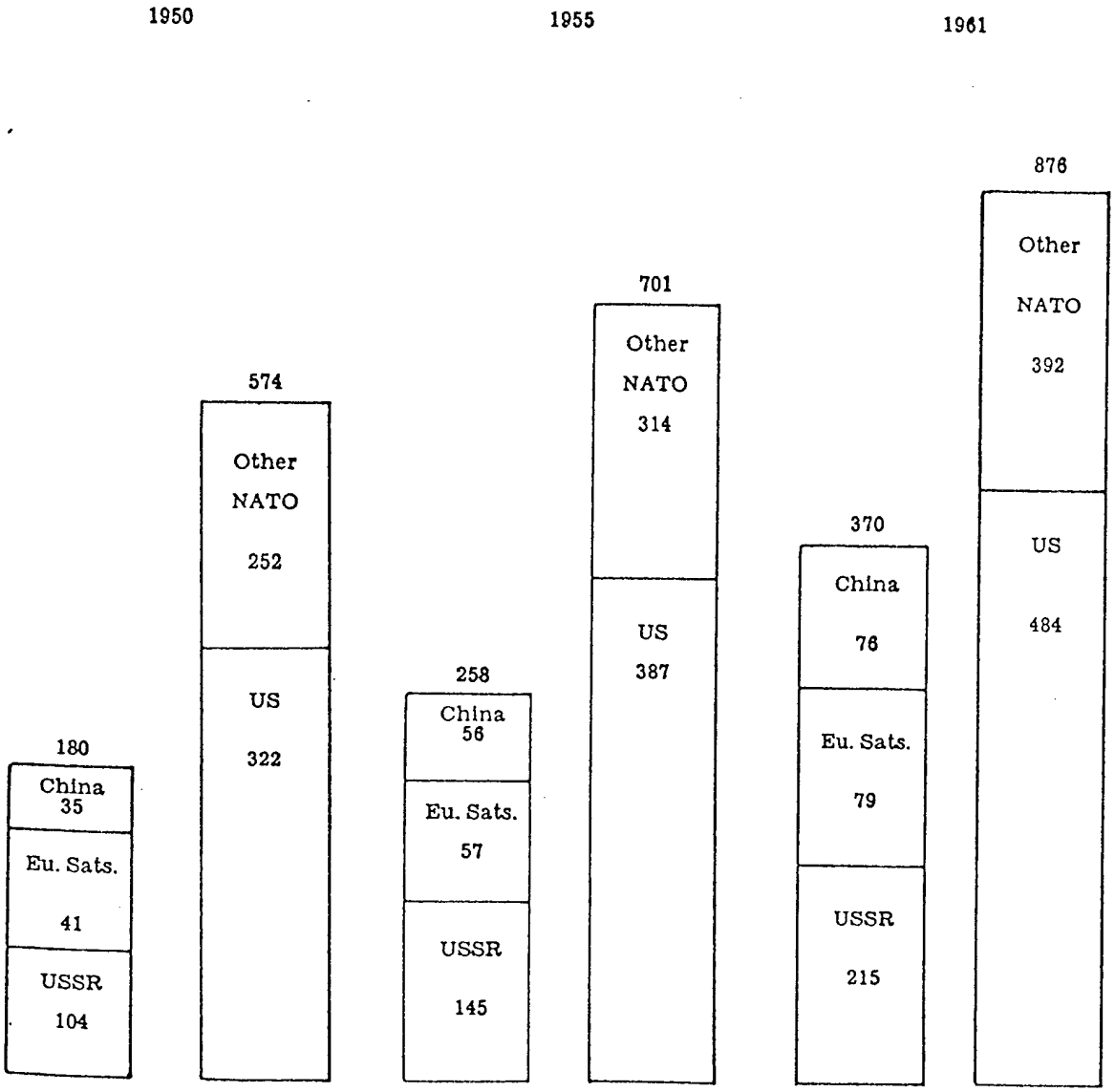
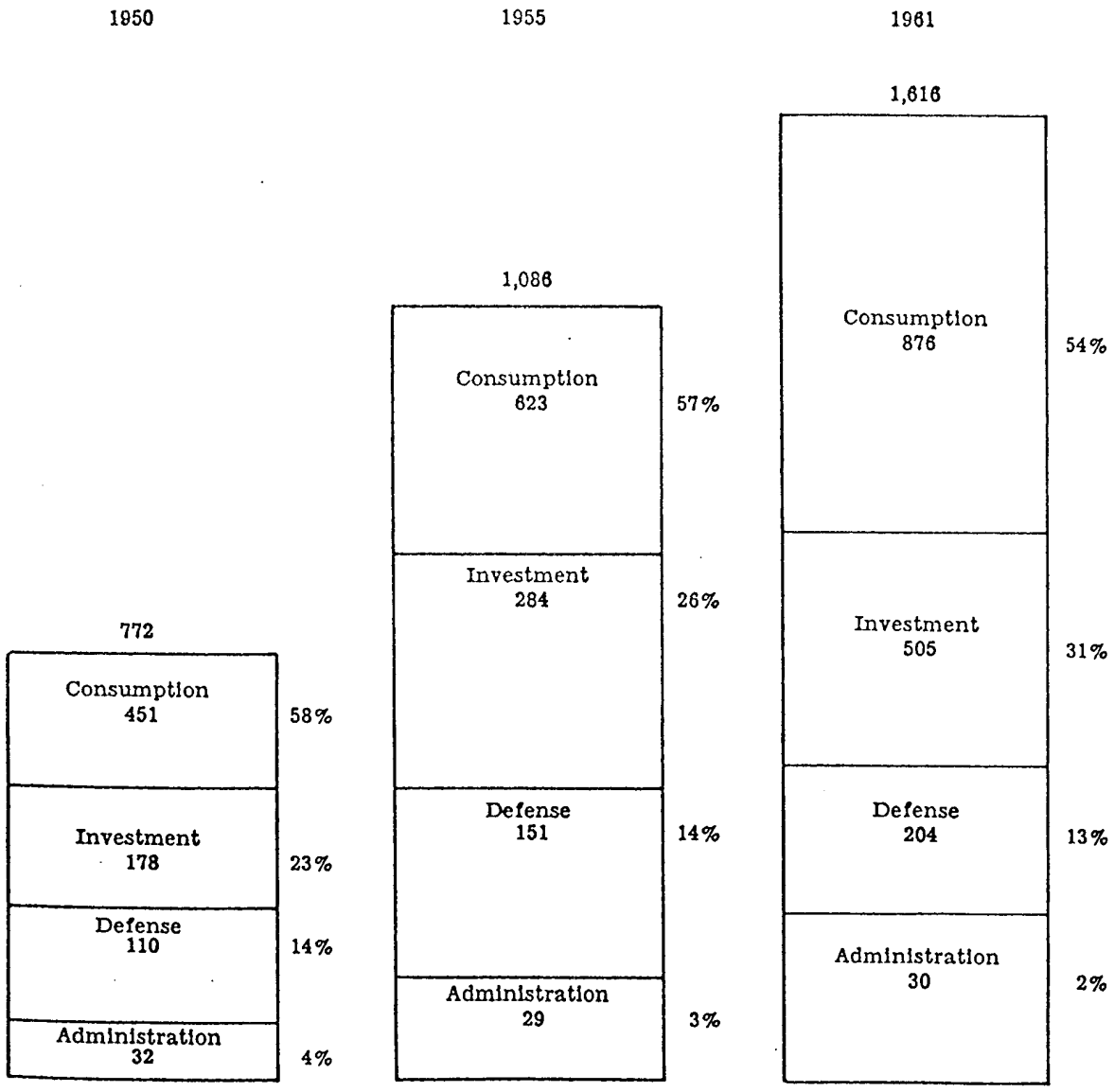


FIGURE 2

GROSS NATIONAL PRODUCT OF THE USSR

(By End Use in Billion 1953 Rubles at Factor Cost)



NOTE: Details do not add to total because of rounding.

37. An estimate of the ruble costs of past and projected military programs indicates that total defense expenditures will probably rise by about 37 percent between 1955 and 1961.[6] Since GNP will probably grow at an even higher rate (about 50 percent), the relative military burden on the economy should decline slightly over this period. The detailed study of defense expenditures indicates that in 1955 not only was the dollar value of total Soviet defense expenditures approximately equal to US expenditures, but also that the dollar value of Soviet hard goods procurement was about equal to that of similar goods procured by the US.

38. That the Soviet Union by expending 14 percent of its GNP in rubles can obtain defense goods and services equal in dollar value to those of the US, which is expending for the same activities 10.6 percent of a GNP two and one half times as large, is explained by two important economic conditions. First, the average level of real pay and subsistence provided to Soviet servicemen, like the general standard of living, is very much lower than in the US. Secondly, the Soviet armament industry is one of the USSR's most efficient industries. The dollar and ruble comparisons above do not mean that the Soviet armament industry is more efficient than the US armament industry. On the contrary, it is likely that productivity (production per man) in the Soviet armament industry is lower than productivity in the corresponding US industry. However, the Soviet armament industry is very much more efficient than Soviet agriculture and the consumer goods industries. While productivity in Soviet armament industry approaches that of the US, Soviet productivity in consumer goods is much lower and agriculture is only about one-seventh that in the US. Consequently a ruble will buy only about seven cents worth of goods and services when spent for consumption goods and services but will purchase from 20 to 25 cents worth when spent for defense purposes. Thus, for example, if each country transfers a worker from agriculture to defense industry, the Soviet worker will produce nearly as much armaments as the American worker, but the loss of his production in agriculture is far less than the corresponding loss in the US and the sacrifice involved is less.

DEVELOPMENTS IN INDUSTRY

39. Despite the present size of Soviet industrial output, only a moderate decline in its high growth rate is estimated in the coming five years. The major factors sustaining a continued high rate of growth, estimated at over 10 percent per year during the period of this estimate, will be continuing heavy capital investment, increases in the number and productivity of workers, and improvements in managerial and technical efficiency. We estimate that *total industrial output* will probably increase by 65 percent or more in the Sixth Plan as compared with 77 percent in the Fifth. Output in 1961 will probably be 83 percent or more above the 1955 level. (See Table I for the estimated output of selected industrial commodities.)

40. Of particular interest is the trend in the *output of heavy industry,* which is basic to future growth, military strength, and capability to export capital goods. In this sector, the increase during the Sixth Plan period will probably amount to 70 percent or more as against 84 percent during the Fifth. The rate of growth of heavy industry nevertheless remains strikingly larger than that of the US and will provide the USSR in 1960 with

[6] This estimate is based upon an inter-agency study, details of which appear in Appendix B. As explained there, a reduction of 1.2 million men in the armed forces would lower defense expenditures in 1961 by some 13–18 billion rubles; correspondingly, the increase in defense expenditures between 1955 and 1961 would fall to about 27–30 percent. On the other hand, expenditures for the guided missile program have almost certainly been understated in the study. The combined result of these two factors cannot be predicted, but it is clear that they will offset each other to some extent.

Note: The Assistant Chief of Staff, Intelligence, Department of the Army does not consider the costs derived in the inter-agency study to be a valid appraisal of the over-all costs of the Soviet military effort and does not concur in the findings of the study. (See footnote to Appendix B, Paragraph 1.)

See also the footnote by the Director of Naval Intelligence attached to Appendix B, Paragraph 1.

TABLE I

ESTIMATED OUTPUT OF SELECTED INDUSTRIAL PRODUCTS

USSR 1950, 1955, and 1961: US 1955

	1950	1955		1961 [a]
	USSR	USSR	US	USSR
Electric Power (billion kwh)	90	170	655	363
Crude Petroleum (million tons) [b]	38	71	335	150
Coal (million tons)	261	391	450	633
Crude Steel (million tons)	27	45	106	73
Refined Copper (thousand tons)	302	462	1,052	746
Aluminum (thousand tons)	210	588	1,497	1,240
Cement (million tons)	10	22	51	63
Machine Tools (thousand units) [c]	79	105	80	200
Freight Cars (thousand 2-axle equivalent units)	102	69	71	100
Trucks (thousand units)	294	329	1,190	447
Synthetic Ammonia (thousand tons) [d]	520	753	2,859	1,596
Cotton Fabrics (million meters)	3,900	5,904	8,950	7,500
Washing Machines (thousand units)	0.3	87	4,237	616
Meat (thousand tons, slaughter wgt.)	3,075	4,000	12,241	5,200

[a] The 1961 estimates, except in the case of meat, are a one-year projection from the official 1960 targets, which we estimate will be substantially achieved.

[b] Figures in tons throughout the table are metric tons.

[c] US production of machine tools fluctuates considerably from year to year. The recent high was 110,000 units in 1952 and the peak output was 307,000 units in 1942. Moreover, the proportion of heavy, complex, and special purpose tools is higher in the US.

[d] Used mostly for nitrogenous fertilizer.

an output equivalent to about 45 percent of US heavy industrial production.

41. We estimate that most announced Soviet targets for commodity output in 1960 will be fulfilled, particularly in producer goods, and that there will be a number of overfulfillments of production goals for major products. The most doubtful elements in heavy industry are the target for installing new generating capacity, which will probably not be met, and the goals for production of non-ferrous metals, which will be fulfilled only with considerable difficulty. Fulfillment of the plan for large increases in the production of machinery and equipment may require more than the additional capital expenditures planned for this industry. Failure to reach overambitious agricultural goals will result in underfulfillments in light industry.

42. *Investment.* Of the total investment during the period 1955–1961, two-thirds will be devoted to industry, the same share which this sector received during the Fourth and Fifth Five-Year Plans. The division of this investment between heavy and light industry will continue at a 10:1 ratio. Heavy capital requirements for increasing output of electric power, petroleum, chemicals, metals, especially non-ferrous, and construction materials, will necessitate a reduction in the investment priority previously accorded to the machine building and metal-working sector, where increases in output outstripped all others during the 1951–1955 period. The proportion of total investment devoted to transportation will be approximately the same as under the Fifth Five-Year Plan. Due to the emphasis on investment to provide more efficient functioning of all forms of transport, we believe that the transport requirements of the Soviet economy will be met.

43. *Labor Force.* Because the effect of lowered wartime birth rates will soon begin to be felt in fewer entrants to the labor force, the USSR can expect population growth to provide fewer new workers, perhaps three million less, during the Sixth Plan than during the Fifth. Armed forces reductions of the size announced, however, would help to reduce this difference. The increase in the industrial labor force, which grew by 23 percent during the Fifth Plan, will fall to perhaps 20 percent in the Sixth.[7]

44. *Productivity.* Despite probable increases in the labor force resulting from a reduction in the strength of the armed forces, productivity per worker will have to rise faster in the new plan than in the old if output targets are to be met and shorter working hours granted. Although the USSR recognizes that worker incentives influence productivity, immediate hopes are placed upon supplying the labor force with a larger volume of modern equipment. This policy is reflected in the investment program, which calls for greater increases in expenditures for new capital equipment than in expenditures for the construction of new plants, though the latter will still absorb the major share of investment funds. A considerable share of this capital equipment will be used to replace obsolescent machinery in existing plants at a much more rapid rate than heretofore.

45. Just as Soviet priorities have produced an economic structure which appears lopsided in contrast with consumer-oriented economies, so they have produced a pattern of technological progress which has been quite uneven in comparison to that of Western nations. Military production has received the most intensive development, and defense and defense-related industries have reached relatively advanced technological levels. In the making of ordinary steels, the best Soviet plants are fully comparable to US plants, although the industry as a whole is not. In

[7] The Sixth Five-Year Plan provides for an increase of only 10 percent in the industrial labor force. Planned increases in the industrial labor force appear to be customarily kept low in anticipation of gains in productivity to be made. When these gains do not materialize, labor shortages are then relieved by above-plan allocations of labor. Thus though the Fifth Plan also called for only a 10 percent increase, in fact some 1.5 million above-plan workers were assigned to industry during the course of the plan. These were drawn largely from the collective farms. Agriculture's higher priority probably will not permit similar transfers during the Sixth Plan, but armed force reductions would serve as another source of industrial labor.

metalcutting processes, the USSR is on a par with or not far behind the US in machinery design and process mechanization, but it has only just begun the application of automated control systems. Production processes are less advanced in metalforming machinery, electric power generation, coal mining, and the chemicals industry; and they lag badly in the low-priority consumer industries. On an over-all basis, the USSR's smaller quantity of modern equipment and lower level of technology are probably the major factors accounting for a labor productivity in heavy industry which is less than half that of the US.

46. This lag is also a rough measure of the USSR's potential for increasing industrial productivity. The Sixth Five-Year Plan calls for a 50 percent increase in productivity. However the government has since promised a reduction in working hours which would require a 71 percent increase in productivity per man-hour if this goal is to be reached. This we doubt can be achieved, but we estimate that productivity will increase during the Sixth Five-Year Plan more than the 44 percent which we estimate was achieved during the Fifth. Productivity gains will result chiefly from modernization of plants and from introduction of advanced domestic and foreign technology. The intensive efforts to improve planning, restore order to the wage system, and raise efficiency through greater plant specialization and better interplant cooperation — problems which have received little attention in the past — are intended to accomplish a comprehensive reform of Soviet industry and to make an important contribution to productivity. Enlargement of the area of managerial initiative may also contribute to this result. On the other hand, a more active party role in the operation of industry may limit the importance of this factor.

47. In summary, we believe that the USSR will meet its announced 1960 targets for total industrial output and for most important heavy industrial commodities. Sufficient above-plan workers will probably be available to compensate for any failures to meet productivity goals, and the transition to a 41-hour work week could be slowed down if necessary. Major shortfalls are expected only in some branches of light industry, where plan fulfillment will be prevented by insufficient supplies of agricultural raw materials.

48. *Regional Distribution of Industry.* Soviet industry will probably undergo a regional shift of considerable importance during the Sixth Five-Year Plan, although the bulk will still be located in European Russia and the Urals. About half of the new capital investment in 1956–1960 is scheduled to occur in the Urals and eastward, and by 1961 this area is to produce more iron and steel than did the entire USSR in 1950 and more electric power and cement than did the whole country in 1954. (See map on following page.) A large share of the new plants built in the next five years are to be located in this region, leaving industry in European USSR to rely heavily on re-equipment of existing plants and other improvements in achieving planned increases in production. The construction of new rail lines will also be concentrated east of the Urals.

49. The development of this region is based upon the harnessing of the Siberian rivers with hydoelectric stations at Irkutsk, Novosibirsk, and Bratsk, the exploitation of large iron and coal reserves, and development of the large but mainly low-grade deposits of nonferrous metals in Kazakhstan. Movement to the interior may be in part intended to reduce the strategic vulnerability of Soviet industry, but considerations of future economic growth are probably of greater importance, since the little-developed resources of this area offer greater long-run potential than further development of the maturer regions of the European USSR.

DEVELOPMENTS IN AGRICULTURE

50. Soviet agriculture in 1955 showed the first significant response to the multiple programs for expanding output which were launched in the preceding two years. Good yields were obtained in the Ukraine, and gains resulting from a large expansion of acreage in the New Lands area were only partially offset by drought. These circumstances, in conjunction with the corn program, raised grain and fodder production by about 15 percent over

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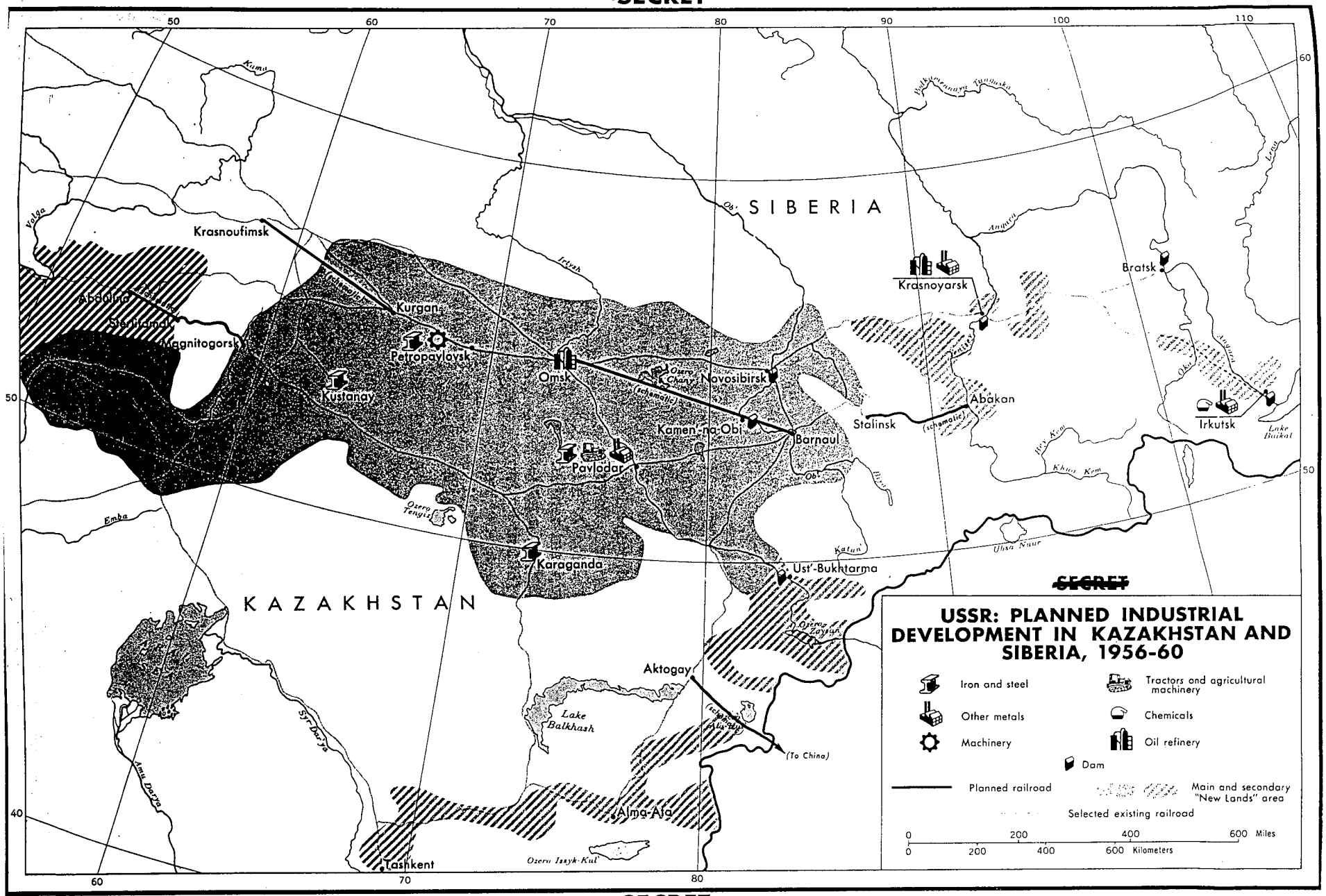

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1954. Potato output declined, however, and technical crops showed a mixed pattern, sugar beets and flax expanding rapidly but cotton production falling. Livestock numbers increased only slowly and meat production grew scarcely at all, but improved fodder supplies contributed to an increase of about 10 percent in milk production.

51. Further growth in agricultural output will almost certainly result from the higher priority accorded to agriculture since 1953 and projected forward in the Sixth Five-Year Plan. State investment in this sector during 1956–1960 is planned at twice the amount invested in 1951–1955 and will require 12 percent of total state investments as against only eight percent in 1952. Further adjustments in prices paid to collective farms and farmers appear to be in prospect in the continuing effort to provide the incentives which previous policies had neglected. In contrast to the period 1928–1952, when agriculture was called upon to provide a continual flow of workers to industry, agriculture will receive labor from the urban areas or at least hold its own. Most important of all, solution of agricultural problems has been defined as the major task of the party membership.

52. Through local recruiting and transfers from urban areas, the party has built up its rural strength from 1.7 million members in 1947 to over three million in 1956. This reinforcement has greatly increased the leadership's ability to execute its programs and may permit greater flexibility in adapting these programs to local conditions, a notably weak point in earlier agricultural campaigns. It has also made more feasible a resumption of the drive against private farming, evidenced in higher requirements for participation in communal labor and a decree "recommending" that collectives "voluntarily" reduce the private plots and livestock holdings of their members. In contrast to Stalin's crude attacks, the present campaign is lubricated by higher incentives for communal work and is based on thorough political preparations. If it remains gradual, state controls over agriculture will probably become more effective, but any sudden acceleration runs the danger of provoking peasant resistance and a decline in output. The key question in this program is whether the new incentive measures will elicit sufficient confidence among the peasants to induce them to regard the collective farm rather than their private holdings as the means to a tolerable and improving standard of living. A further pressure on the private sector is reflected in programs to increase state farm output, particularly of commodities competitive with those sold by individual peasants in the free market.

53. Prediction is particularly hazardous in Soviet agriculture, but an increase of about one-fourth in the total value of farm output appears likely over the period 1955–1961 principally because of an increase in quality products, such as meat, milk, and fibers. This rate of growth is about double that achieved during the Fifth Five-Year Plan but far below the Sixth's official target of 70 percent. Our estimate allows some success to the New Lands and corn programs, despite climatic dangers and high costs. Although some further acreage expansions can be expected, most of the gains in grain production will come from the improved yields which should result from a greater than two-fold increase in the combine park for small grains and, in the case of corn, from the use of hybrid seeds, further machinery supplies, and an accumulation of experience. We estimate that grain output in 1961 will probably be about 116 million tons against an estimated 1955 harvest of 100 million tons and an official 1960 target of 180 million.

54. Because current Soviet agricultural policy focuses upon higher outputs of livestock products, two-thirds of this increase will be in fodder grains, in which unripened corn harvested early in climatically inhospitable areas will play a major role. This program has already produced good results in the higher milk yields of cows wintered on this feed in 1955–1956. Increases of 25–30 percent in meat and milk production over the period 1955–1961 are expected to result primarily from higher productivity per animal rather than from larger herds, although swine numbers probably will grow significantly since they do not compete seriously with cattle for the

limited meadow and pasture areas. These increases, while far below the official 1960 targets for a doubling of production, will nevertheless represent important gains.

DEVELOPMENTS IN CONSUMPTION

55. Soviet per capita consumption rose at an average rate of about five percent per year during the Fifth Five-Year Plan and is expected to rise at about four percent per year during the Sixth, raising the living standard by over one-quarter between 1955 and 1961. This is an appreciable improvement in material welfare, even though part of it is more apparent than real, reflecting merely the shift, associated with urbanization, from the consumption of goods made at home to purchase in the market. Although this living standard will still be low by Western criteria, it probably will not be a cause of serious dissatisfaction, since the Soviet citizen will almost certainly continue to experience steady improvements in material welfare. Neither will Soviet living standards appear as a mark against the Soviet system in the eyes of most Asians, Middle Easterners, and Africans, accustomed to much lower per capita levels of consumption.

56. The estimated gains in agricultural output will be the major factor in improving the living standard since agriculture provides the basis for about three-quarters of Soviet consumption. Per capita supplies of food and clothing in 1961 are expected to be 24 and 43 percent, respectively, above 1955 levels.[8] The expansion of durable consumer goods output will exceed these rates. However, production will fall off from the high rates of 1953–1955, total output will be modest, and these goods will remain available only to upper-income groups. Historically, consumer goods production has suffered whenever industry has run short of resources, producer goods having a higher priority. An important improvement will occur in urban housing, where the very limited per capita space will rise by roughly one-quarter.

[8] The rise in the value of per capita consumption of agricultural products will run ahead of the increase in total agricultural output because of increases in the value added by processing and packaging.

57. In the distribution of personal income, the higher agricultural prices paid since 1953 have narrowed somewhat the gap between rural and urban incomes and will continue to do so during the coming five years. The lowest pension and wage rates are to be raised, and higher pension rates are to be cut. These measures will tend to reduce somewhat the extreme class differentiations which Stalin's economic and social policies had produced.

DEVELOPMENTS IN FOREIGN TRADE

58. The expansion of Soviet foreign trade, which has been fairly rapid in recent years, leveled off in 1955 at about $6.3 billion, due primarily to the fact that trade with Sino-Soviet Bloc partners, which accounts for about four-fifths of the total, remained virtually unchanged. (See Table II.) New increases in trade within the Bloc are expected to result from Communist China's continuing need for Soviet assistance in its industrialization program and the increasing coordination of the Soviet and East European Satellite economies.

TABLE II

INDEX OF VOLUME OF SOVIET FOREIGN TRADE

(1951 = 100)

Year	Bloc	Non-Bloc	Total
1948	38	146	59
1949	55	110	66
1950	89	81	88
1951	100	100	100
1952	117	114	117
1953	141	120	136
1954	146	166	150
1955	148	172	152

59. In its trade with the Free World in 1955, the USSR substantially increased its exports as compared with 1954 and reduced its imports, notably of foodstuffs, thus converting a deficit into a rough balance of trade. Western Europe's share of Soviet trade with the Free World rose slightly to over four-fifths. The share of manufactured goods in Soviet exports continued to increase, and while the USSR remains a large net importer of capital

goods in its Free World trade, its own capital exports are rising. We estimate that Soviet trade with non-Bloc countries will rise during the next five years, with developed countries continuing to account for the major share.

60. The most important development in Soviet foreign economic relations in 1955 was the rapid acceleration of the USSR's campaign to establish the claim that it can be a major source of economic assistance to underdeveloped countries, although the volume of trade with these countries does not yet loom large in total Soviet trade. The most dramatic feature of this campaign, in which Communist China and the European Satellites are also participating, is Bloc offers of capital equipment, military goods, and related technical services. These offers include deferred payment at low interest rates, frequently in local currencies or exportable surpluses which the underdeveloped countries find unsalable in other markets at satisfactory prices. Bloc offers of medium and long-term credit now exceed one billion dollars, and credit agreements totaling more than $800 million have been reached with 12 countries, including Yugoslavia ($299 million), India ($158 million), Egypt ($175 million), and Afghanistan ($122 million).

61. During the coming five years, Soviet trade with underdeveloped countries will probably exceed the 1955 level of about $200 million by several times, with a substantial share financed by credit. In the 1930's the USSR, seeking to industrialize rapidly, exchanged its low-cost foodstuffs and raw materials for capital equipment from Western Europe and the US. A quarter century of industrial growth, agricultural neglect, and exploitation of the most high grade and accessible raw materials has so reduced the cost of manufactured goods relative to those of food and raw materials in the Soviet Union that it is now economically profitable to export capital equipment in return for the food and raw materials of other countries now seeking to industrialize. In addition to economic considerations, this stage of development coincides with a period in which the USSR can profit politically from such trade. The USSR's success in industrial development as against its poorer agricultural record and prospects provides further motivation for this kind of trade policy.

62. Soviet economic capabilities are adequate to support a considerable expansion of Soviet trade and credit programs with underdeveloped countries in the next several years. Soviet shipments of capital goods and arms to all countries have more than doubled since 1950. Credit extensions by the USSR to non-Bloc countries amount at present to less than $500 million, or about one-third of one percent of Soviet GNP. The USSR has a capability for expanding exports of capital goods which is large relative to the probable requirements of these countries, and the estimated 80 percent increase in production of machinery and equipment during the Sixth Five-Year Plan will further increase this capability. In addition, central planning and a state monopoly of trade provide the USSR with an advantage over capitalist countries in the coordination of internal and external policies, giving it great freedom in directing its foreign trade for maximum political as well as economic advantage.

63. While past policy has severely limited foreign trade, historic Soviet fears of losing economic independence through reliance on foreign sources appear to have been reduced by the strength of the Soviet economy and by the creation of the Bloc market. The Soviet leaders apparently realize that a marginal degree of reliance upon non-Bloc sources of supply, especially for products of advanced technology, for certain foods, and for some raw materials, is preferable to a more rigid policy of autarky, since it offers the promise of more rapid rates of economic growth. In addition, they see opportunities in such trade programs for promoting neutralism in the underdeveloped countries and encouraging political attitudes favorable to the USSR and its economic achievements under Communism. The future size of the trade and credit program with underdeveloped countries is likely to depend as much on conditions in and the policies of these countries as on Soviet willingness and ability to expand these exchanges.[9]

[9] For a more detailed assessment, see NIE 100-3-56, "Sino-Soviet Policy and Its Probable Effects in Underdeveloped Areas" (24 April 1956), especially Paragraphs 23-35.

IV. SOVIET SCIENCE AND TECHNOLOGY[10]

SCIENTIFIC RESOURCES AND POLICY

64. Soviet scientific and technical capabilities continue to expand rapidly. Although total Soviet scientific resources remain smaller than those of the US, and assets of the Sino-Soviet Bloc far smaller than those of the West, the USSR has been able to achieve near parity with the US in areas of critical military and industrial significance. By increasing the emphasis on science and technology and by controlling the allocation of scientific manpower and facilities, the Soviet regime has developed from a small original base augmented by past exploitation of Western science enough competence to provide expert scientific support for priority military and economic programs.

65. *Trained Manpower.* We estimate that the USSR as of mid-1956 has about 1,690,000 graduates of scientific and technical curricula given at the university level; about 915,000 of these are post-World War II graduates. The number of these graduates actually employed in scientific and technical fields in the USSR (1,360,000) compares closely with that in the US. However, the USSR is now graduating substantially more trained scientists and engineers annually than the US. If present trends continue, by mid-1961 the USSR will have more graduates employed in scientific and technical fields than the US and about 60 percent more in physical sciences and engineering.[11]

66. In the postwar period the quality of Soviet scientific training has been generally good and has approached and in some cases surpassed US levels. However, the number engaged in research and teaching in the physical sciences and engineering is substantially smaller in the USSR than in the US.[12] Moreover, the practical and experimental aspects of engineering training have been traditionally weak, although efforts are being made to overcome this. Weaknesses in scientific training will not, however, affect Soviet ability to achieve technological objectives to which priority is attached.

67. *Scientific Facilities.* Financial support, organizational direction, and the quality of laboratories are generally adequate for the effective utilization of scientific talent. Although complex research instruments are probably in shorter supply than in the US or UK, we believe that present Soviet research and development programs of major importance are hampered only slightly by shortages or nonavailability of scientific instruments and equipment. On the other hand, programs of lower priority are probably hampered to a greater extent. We believe that by 1961 the USSR will have made further substantial progress in research and development in electronics, which is basic to instrumentation, and will have achieved near equality with the US in research instruments.

68. *Basic Research.* The quality of Soviet basic research in mathematics, and in many fields of physics and chemistry is believed about equal to that of the US. New evidence indicates striking progress over the past few years in such important fields as nuclear physics, geophysics, high-speed digital computers, high-temperature alloys, and the theory of automation.

69. Ideological obstacles to scientific research and development — never of importance in the major industrial or war-supporting fields — will probably diminish in consequence of the repudiation of both past doctrinal rigidity and an outwardly contemptuous attitude towards Western technology. Recognition of

[10] NIE 11-6-56, "Capabilities and Trends in Soviet Science and Technology" is scheduled for early publication.

[11] Numerical estimates of Soviet scientific personnel are believed to be correct within plus or minus 10 percent. For detailed comparison of USSR and US scientific personnel, see graphics on the following page.

[12] See the category "Scientific Workers" in the graphics on the following page.

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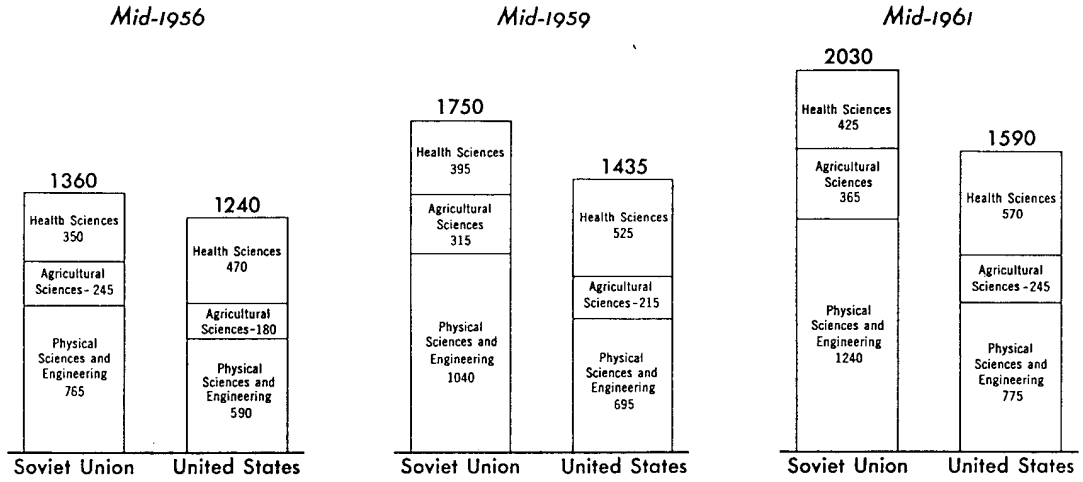
US AND USSR

COMPARISON OF MAJOR SCIENTIFIC GROUPS*

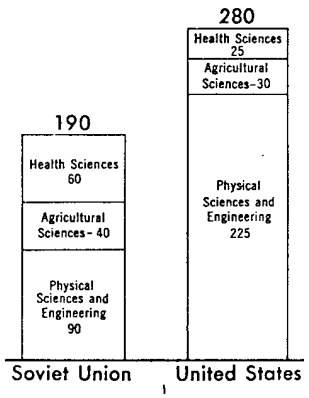
(In Thousands)

GRADUATES EMPLOYED IN SCIENTIFIC FIELDS

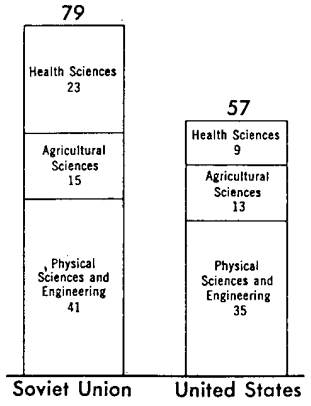


"SCIENTIFIC WORKERS"

(Professional scientists in research institutions or teaching in higher educational institutions)



SOVIET KANDIDATS AND AMERICAN Ph.D.'s IN SCIENTIFIC FIELDS**



* Numerical estimates of Soviet scientific personnel are believed to be correct to within plus or minus 10 percent.

** In the physical sciences, engineering, and the health sciences, the quality of the kandidat degree is roughly equivalent to or slightly below that of the US Ph.D. In agricultural and biological sciences it is closer to that of a US masters degree.

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their retarding effects in certain phases of biological and agricultural sciences was implicit in the recent demotion of Lysenko and in Soviet purchases of US hybrid corn. Weakness in these fields (and in agricultural machinery) were probably caused, however, more by official emphasis on other areas of research and development than by ideological restraints, and will probably be partly remedied by 1961. Agricultural research is now more intelligently directed than in the past toward solving the essential problems of increasing per acre crop yields and livestock production. There is an evident intention to profit from US experience in such fields of current Soviet emphasis as mineral fertilizers, chemicals to control crop and livestock pests, and crop breeding.

70. The Satellite scientific contribution to Soviet technological development is largely in optics, electronics, communication equipment, synthetic fibers, and pharmaceuticals. Its relative importance will probably diminish during the next five years because of increasing Soviet capabilities in these fields.

71. *Nonprofessional technicians.* The USSR is not as well supplied with technicians, mechanics, and maintenance men as are the Western industrial countries, where broader sections of the population have acquired mechanical skills over a longer period. Standards of maintenance are also generally lower than in these countries. However, Soviet engineers have partly compensated for these deficiencies by building machines and equipment which are simple in design and easy to maintain and repair. Considerable progress has been made during the last decade in increasing the supply of nonprofessional technical personnel, and the present emphasis on specialized training after lower school should significantly increase the number available by 1961. The 10-year lower school program of the USSR, which is gradually replacing the former seven-year curriculum, also includes a high proportion of scientific and technical subjects of use in training nonprofessional tecnicians.

SCIENTIFIC AND TECHNICAL DEVELOPMENTS OF ECONOMIC AND SOCIAL SIGNIFICANCE

72. Soviet technology in heavy industry has demonstrated a familiarity with the most advanced skills and a capability for adapting and introducing modern techniques, whether self-developed or borrowed, into their rapidly expanding industrial base. However, Soviet practices were initially backward, and the introduction of new techniques has often been slowed by reluctance to replace obsolete but still workable equipment. Thus, while the best Soviet practices in many industries can be generally considered equivalent to those of the West, the average level of Soviet practices still lags considerably behind that of the West.

73. The USSR plans to increase greatly the emphasis on automation in industrial technology during the current Five-Year Plan although progress in this sphere will probably be less than in simple mechanization and reequipment. In the technology of chemical production the USSR generally lags well behind US practice, but the USSR is now making a major effort to develop new techniques in petrochemistry. In the metals industry, advances in rolling and finishing technology have lagged badly behind advances in most other divisions, although further progress is likely during the period of this estimate. Soviet ability to design metal-cutting machinery is believed to be comparable to that of the US, and with respect to ceramic tools for high-speed cutting the USSR is superior to the US.

74. Soviet medical science is generally advanced, but behind that of the major Western countries in some areas of basic microbiological research. Clinical research and practices are nearly comparable to Western standards, and Soviet work in biochemistry, hematology, and physiology has been outstanding. Accomplishments in the latter field continue to be applied to mental and physical conditioning, and there has been a partial rehabilitation of the science of psychology from the rigid doctrinal bonds of the Stalin era.

SCIENTIFIC AND TECHNICAL DEVELOPMENTS OF MILITARY SIGNIFICANCE

75. The USSR almost certainly has the scientific and technological capability necessary to develop weapons and military equipment which are generally equal to those of other nations, and in the technological race there are times when in certain fields the USSR may well be ahead of the US, and times when the US will outstrip the USSR. Though the USSR probably cannot carry out parallel programs simultaneously in all fields, its scientific resources are adequate to press vigorously programs in a variety of priority areas.

Nuclear Weapons[13]

76. As a result of new evidence we have revised upward by a factor of about four our previous estimates of past and future Soviet production of U–235. The element of uncertainty in our current estimate of past production is very large, but the error probably does not exceed plus or minus 50 percent.[14] [15] Our estimate of future U–235 production is subject to further variables, such production being dependent primarily on Soviet plans and decisions and is therefore less reliable than the estimate of 1956 cumulative production.

77. A highly significant development during the past year was the airburst on 22 November 1955[ ] This test, together with the above revision in our fissionable materials estimate, leads us to estimate that the USSR now has a significant multimegaton weapons capability and will have a major capability in the near future. The USSR could have begun developing an emergency capability stockpile, and have perhaps[ ] of the 22 November 1955 type by 1 July 1956 if it did not encounter fabrication difficulties. About this time, it could be in full-scale production so that it could have converted a major portion of its U–235 stockpile by about 1 January 1957.

78. The USSR is now capable of increasing the yield of the 22 November 1955 type weapons[ ] by further developmental advances. Future developments will probably lead to increasing the nuclear efficiency, yields, and deliverability of high-yield weapons. We estimate that prototypes of high-yield missile warheads (though with yields [ ] will be tested by 1957–1958.

79. Soviet interest in low-yield, small dimension weapons is well established by Soviet military doctrine and by the large proportion of low-yield weapons or devices detonated in the test series of 1953–1956. [ ] Improved efficiencies, which will permit more widespread use for air defense, are expected by 1959.

80. The USSR conducted its first underwater atomic test near Novaya Zemlya on 21 September 1955, which opens new vistas into the development of atomic weapons for a variety of naval uses, resulting in a significant increase in the over-all Soviet nuclear warfare capability.

81. Available evidence indicates that the USSR is presently stockpiling and will continue to stockpile a versatile family of nuclear weapons, ranging from very low-yield warheads to high-yield thermonuclear weapons. We cannot determine with any degree of certainty the probable number of nuclear weapons of each type since this will depend

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[13] See NIE 11–2–56, "The Soviet Atomic Energy Program," 8 June 1956 (RESTRICTED DATA) for fuller details and dissents.

[14] The Director of Naval Intelligence believes these estimates of U–235 production to be too high. He believes that for planning purposes a more practical magnitude would be in a range below that of the minus 50 percent lower limit of this estimate.

[15] The Deputy Director for Intelligence, The Joint Staff, believes that the new intelligence does not adequately support the estimate of U–235 cumulative production. A more practical figure for planning would be one in the lower range of uncertainty approaching the minus 50 percent lower limit given for 1955.

on strategic and other factors. However, in order to provide an appreciation of Soviet stockpile capabilities a few arbitrary illustrative stockpiles under varying strategic assumptions are given below. It is emphasized that these are purely illustrative, as the USSR can utilize its fissionable material in any number of weapons combinations.[16]

Arbitrary Examples of Soviet Stockpile Allocations as of Mid-1956.

(*a*) Assuming overriding priority to high-yield weapons for attack on allied retaliatory strength and relatively less emphasis on various types of medium and low-yield weapons:

High Yield [ ]
Medium Yield [ ]
Low Yield [ ]

(*b*) Assuming roughly equal priority to high-yield and to various types of medium and low-yield weapons:

High Yield [ ]
Medium Yield [ ]
Low Yield [ ]

Arbitrary Examples of Soviet Stockpile Allocations as of Mid-1961.

(*a*) Assuming close to maximum emphasis on high-yield weapons; limited requirement for medium-yield; considerable requirement for low-yield weapons, primarily for air defense:

High Yield [ ]
Medium Yield [ ]
Low Yield [ ]

(*b*) Assuming roughly equal priority to high, medium, and low-yield weapons, the latter primarily for air defense:

High Yield [ ]
Medium Yield [ ]
Low Yield [ ]

82. *Nuclear Power.* The Soviets have displayed considerable progress in nuclear electric power reactor development. We estimate that it is capable of meeting the ambitious goals of the Sixth Five-Year Plan for 2,000–2,500 MW of installed capacity by the end of 1960, but this achievement will require a very high priority effort.

83. *Nuclear Propulsion.* The state of Soviet reactor technology also indicates that the USSR is capable of developing propulsion applications. We estimate it could produce a reactor suitable for submarine or surface ship application by 1956–1957. The Soviet aircraft propulsion program probably will not progress beyond the research phase prior to 1958.

Guided Missiles[18]

84. We believe that the strategic requirements of the USSR have dictated a major effort in the field of guided missiles. From the evidence of a large number of personalities and activities associated with missile development, recent statements of Soviet leaders, observed air defense sites around Moscow, and other material, we have concluded that the USSR is engaged in an extensive guided missile program on a high priority. The USSR has an adequate economic base for a sizable production program; and we are convinced — from our knowledge of Soviet exploitation of German missile experience and evidence of Soviet capabilities in related fields — that the USSR has the basic scientific and technical capability to support a comprehensive research and development program. We believe that the USSR now has surface-to-air guided missiles in at least limited operational status, and could have guided missiles in limited operational status in the other three categories (air-to-surface, air-to-air, and surface-to-surface). Soviet missile capabilities will continue to grow during the period of this estimate. However, we have little firm information on the specific characteristics of the missile models

[16] For analysis of these various alternatives and the reasoning behind them, as well as for methods of calculating other alternative stockpiles, see NIE 11-2-56. It should be noted that the dissents of the Director of Naval Intelligence and the Deputy Director for Intelligence, The Joint Staff, also apply to these stockpile quantities.

[17] [ ]

[18] For fuller discussion of Soviet guided missiles, including estimates of the dates when various types of missiles might appear in operational use, see NIE 11-12-55, "Soviet Guided Missile Capabilities and Probable Programs," published 20 December 1955. This will be superseded by NIE 11-5-56, "Soviet Guided Missile Capabilities and Probable Programs," to be published in October 1956.

the USSR is presently developing, or may now have in operational use.[19]

Electronics

85. The magnitude, diversity, and past success of the Soviet research and development program in electronics indicate the probable development of new and improved electronic devices during the period of this estimate. Soviet air defense capabilities will probably be enhanced by continuing improvements in detection, warning, interception, and data-handling equipment. Air offensive capabilities are likely to be improved by an increase in accuracy of Soviet navigational equipment and bombing radars, which will probably be comparable in performance to Western equipment. Soviet research on communication theory will probably result in improvements in communication techniques, radar, computers, automatic guidance devices, and telemetering, and could lead over the next five years to development of a communication network exceedingly difficult to intercept or jam.

a. *Early Warning Radar (EW).* The USSR has a large variety of EW radars in use, including World War II sets, native sets based on Western designs, and sets of purely native design. Most of the older sets will probably be replaced by the end of 1956. Soviet radar coverage is estimated to be fairly reliable against jet medium bombers at maximum ranges from 125 miles (up to 60,000 feet altitude) to 180 miles (up to 45,000 feet altitude). By 1958 the USSR will probably have developed one or more EW radars capable of detecting jet medium bombers at 65,000 feet up to a distance of about 200 miles, or under certain circumstances to as much as 300. The problem of low altitude coverage will still exist, but probably will be greatly lessened by the use of moving target indicators and gap-filler radars.

b. *Ground-Control Intercept Radar (GCI).* We estimate that by 1958 the USSR will have GCI radars of new types as well as the following types now in use: (1) the V-beam sets which are probably capable of coverage on jet medium bombers at maximum reliable ranges of 75–110 nautical miles, and (2) the paired combinations of long-range azimuth indicating sets (GAGE) and height indicating sets (PATTY CAKE), which collectively can provide GCI data. We believe that by 1961 GCI coverage will be increased to the order of 200 miles and perhaps beyond. Ranges of this sort would require the use of transponder beacons not now known to be installed in interceptor aircraft. By 1959, reliable altitude coverage will be achieved up to a maximum of 60,000 feet, though at less than maximum ranges.

c. *Airborne Intercept Radar (AI).* Airborne intercept radar is now in extensive use. The best equipment expected to be available during the next five years may have maximum ranges against medium bombers of about 30 nautical miles for search and 20 for tracking, with range accuracy of plus or minus 25 yards and angular accuracy of plus or minus one degree. The best of the equipment currently available may approximate this performance.

d. *Blind Bombing and Navigational Radar.* The USSR has operational an X-band (three centimeter) set, which will probably be improved. By the end of 1957 we estimate that the best Soviet blind bombing and navigational radar will be capable of operating at altitudes up to 60,000 feet, and will have a range of about 125 nautical miles for navigation. Bombing and navigation accuracies will be about equivalent to those of Western equipment. The use of frequencies higher than X-band is unlikely for the present, but may be achieved by mid-1960.

e. *Fire Control Radar.* The WHIFF radar, the Soviet version of the SCR–584, will continue to be used in quantity, and a new set, FIRE CAN, is coming into quantity use. Radar sets with even greater accuracies, range definitions, and reduced vulnerability to jamming might appear at any time. The X-band will probably be used for newly developed fire control radars.

f. *Electromagnetic Warfare.* The USSR presently has the capability of seriously disrupting Western long-range radio communi-

[19] For estimates of the capabilities of Soviet forces to employ guided missiles, see Paragraphs 139–142.

cations and electronic navigational systems. Capabilities in related electronic fields indicate that the USSR is probably capable of electronic jamming at frequencies through 12,000 megacycles, and possibly considerably higher. By 1960 the USSR may have jamming equipment in operational use in frequency ranges through 30,000 megacycles. Evidence indicates that the USSR is now training in the use of "chaff."

g. *Microwave Communications.* Microwave communication equipment is in wide use in East Germany, and we believe that existing fixed networks in the Soviet Union and some other Bloc areas are expanding. A recent marked decrease in Soviet orders for microwave relay sets from the Satellites probably indicates that Soviet expansion of microwave communications will be accomplished largely with Soviet equipment. By 1960, the estimated minimum channel capacity for long distance civil circuits will be 24, and the equipment will be suitable for relaying a signal many times without serious degradation. Soviet research in semiconductors indicates that by 1960 transistors will be used extensively in communication equipment, which will thus be much lighter and less power-consuming than present-day counterparts.

Biological Warfare

86. The USSR has the technical knowledge, trained personnel, and facilities necessary for conducting an extensive program in BW research and development. Accumulated evidence indicates that the USSR is almost certainly engaged in such a program, probably including antipersonnel, antilivestock, and possibly anticrop agents. The scope and magnitude of the program cannot be judged from the information available, but the organisms of at least four human diseases (anthrax, tularemia, plague, and brucellosis) and two animal diseases (foot-mouth and rinderpest) are believed to have been investigated as BW agents.

87. The USSR also has the facilities, personnel, and materials needed for the large-scale production of BW agents, although we have no evidence of such production at present. We believe that it has a current capability for clandestine BW operations against personnel, livestock, and certain crops, and a BW defensive capability generally comparable with that of Western countries. Soviet capabilities for clandestine and possibly for overt employment of BW agents will probably continue to be expanded, and defensive capabilities improved.

Chemical Warfare

88. During World War II, the USSR produced most of the standard chemical agents and auxiliary equipment for chemical warfare. The USSR is believed to have maintained some of its wartime toxic munitions stockpiles and continued some peacetime production of toxic CW agents. While present production figures are not known, the USSR has the materials and skills available to produce some 40,000 to 60,000 tons of toxic agents per year. These agents would consist primarily of mustard gas and such nerve gases as GA (Tabun) and, in small quantity, GB (Sarin). Soviet CW armament reserves are believed sufficient to sustain large-scale operations for several months. Soviet defensive capabilities are believed comparable to those of Western countries. During the period of this estimate, the USSR will probably conduct research on new types of toxic agents, including the "V" agents and possibly certain psychogenic agents.

V. SOVIET MILITARY STRENGTHS

TRENDS IN SOVIET MILITARY THINKING

89. In the last few years Soviet strategic concepts and the Soviet military establishment have been undergoing a process of evolution, dictated both by the advent of nuclear weapons and advanced delivery systems and by the fact that the USSR's chief potential enemy, the US, lay beyond the reach of traditional Soviet military power. Whereas formerly Soviet forces were designed almost exclusively for massive land battles on the Eurasian continent, they now include substantial long-range air and submarine forces designed primarily for the contingency of a conflict with the US which would not be limited to Eurasia.

90. Soviet military thinking through the end of World War II emphasized traditional Russian/Soviet territorial objectives, Stalinist concepts of "permanently operating factors" determining the outcome of a war, and battle-tested methods of employing the various elements of military power. In the immediate postwar period, the Soviet continental base position and the strengths and weaknesses of existing Soviet military, political, technological, and economic assets dictated an essentially "Eurasian" strategic concept. In assessing the world balance of military forces Soviet planners apparently recognized that their only significant military advantage lay in the preponderant Soviet capability for land operations on the Eurasian continent. Soviet offensive planning probably reflected the belief that in the event of war it would be necessary to overrun rapidly as much of the Eurasian land mass as possible, particularly the strong economic and military base in Western Europe.

91. The USSR has probably continued to recognize in its military thinking the great importance of the Eurasian area for Soviet strategic interests and has therefore continued to maintain and modernize large ground and tactical air forces. At the same time, the USSR evidently came to appreciate that the primary military threat which it faced was from growing US nuclear striking power. Consequently, emphasis was first given to the strengthening of Soviet air defenses, including the early production of jet interceptors and the creation of an early warning screen extending to the borders of the newly acquired Satellites. The USSR also undertook a program for strengthening and increasing the range of the Soviet submarine fleet in order to interdict overseas reinforcement of Eurasian areas in event of war. Concurrently, the USSR embarked on an intensive research and development program for the production of new weapons systems in order to overtake and surpass Western technological achievements and to acquire a capability for direct attack on the US. High priority was given to developing nuclear weapons, improved electronic equipment, long-range bombers, and various types of guided missiles.

92. There is additional evidence of change in Soviet military thinking. It was only after World War II that the USSR began seriously to develop a strategic air capability. Moreover, the formulation of new concepts was probably given freer rein by the emergence after Stalin's death in 1953 of an atmosphere more conducive to an objective re-examination of strategic questions, and there has been considerable discussion of the significance of strategic surprise on the outcome of war, a factor which Stalin's pronouncements tended to play down. The nature of operations in the initial stage of a war, including surprise nuclear attacks, has been closely examined.

93. The concentrated effort given to the development of nuclear capabilities demonstrates that the Soviet leaders have for some time been aware of the significance of the new weapons. They have probably recognized that the US nuclear capability remains superior to that of the USSR, despite strenuous efforts made to build up the latter. This assessment, together with the great relative geographic advantage derived by the US from its deployment of nuclear forces around the periphery of the Bloc, as well as on the more remote

bases in the continental US, has probably led the Soviet leaders to conclude that at present the USSR, even if it launched a surprise attack, would receive unacceptable damage in a nuclear exchange with the US. Therefore, the Soviet leaders have almost certainly concluded that their principal efforts must be directed toward countering Western strategic nuclear capabilities. Aside from employing political means to this end (such as attempting to disrupt the alliances which provide bases for deployment of US strategic air power) the Soviet leaders are attempting to counterbalance and surpass Western nuclear strength by developing as rapidly as possible their own strategic nuclear capability and their air defense. Nevertheless, they probably believe that, at least during the period while the manned bomber remains the primary delivery vehicle and while the US network of overseas bases is maintained, they will have to contend with a geographic disadvantage in the application of strategic air power.

94. Despite the formidable military strengths developed by the USSR, the Soviet leaders probably do not regard the deliberate initiation of general war as a presently admissible course of action. Moreover, they probably cannot now foresee whether military developments over the next five years, including planned advances in their own offensive and defensive capabilities, will so affect the relative balance of military power as to alter their view in this respect. They almost certainly expect that the continued existence of powerful Western nuclear striking forces, and the likelihood that the West would use these forces in the event of general war, will make deliberate Soviet initiation of general war a course of action involving unacceptable risks.[20] At the same time, the Soviet leaders almost certainly believe that the development of their own nuclear capabilities has reached a stage at which the West is also deterred from deliberate initiation of general war. In our view, therefore, the USSR is maintaining, strengthening, and further developing its armed forces primarily for three purposes: (a) to deter the US from initiating war against the Bloc; (b) to support Soviet diplomacy and other forms of political warfare against the West; and (c) to provide a capability for fighting a general war successfully if it occurs, and also for engaging in, or supporting, limited or localized wars.

[20] The Assistant Chief of Staff, Intelligence, Department of the Army, believes that, possibly by late 1958 or early 1959, the Soviet leaders may come to believe that their own nuclear capabilities have reached the point where the US would be inhibited from launching nuclear attacks, even in response to deliberate Soviet initiation of general *non-nuclear* war. Accordingly, he believes that the USSR might then adopt a strategy of undertaking such a war, and that the likelihood of this contingency is considerably greater than indicated in the text of Paragraph 94.

TRENDS IN STRENGTH AND EFFECTIVENESS OF SOVIET FORCES

95. In the course of the Soviet leaders' reexamination of their military situation, the roles of the various types of Soviet military forces, as well as the optimum balance among these forces, have clearly been under review. While the concept of maintaining balanced forces of all types has been evident in recent Soviet doctrine and in pronouncements by Soviet military leaders, their statements and Soviet weapons programs have shown that long-range air and naval striking power is now given much more weight in this balance than it was at the end of World War II. At the same time, published Soviet materials on strategy and tactical doctrine, as well as the announced Soviet intention to reduce the size of the military establishment, point to maintenance of smaller, more mobile, better-equipped field forces. A re-evaluation of force requirements in the light of the present world balance of power may have contributed to a Soviet decision to adjust the size of its active military forces to a lower level than that maintained heretofore.

Likelihood of Force Reductions

96. Our last estimate in this series (NIE 11–3–55, dated 17 May 1955), as well as earlier ones, gave the personnel strength of Soviet military forces, excluding security forces, as about four million men. There are indications, however, that our estimates of Soviet military personnel strength have not reflected

certain changes in Soviet force levels.[21] We now believe it probable that these levels were substantially higher during the Korean War than we estimated, that a gradual reduction in force levels began in 1953, but that these levels as of May 1955 were probably somewhat higher than we then estimated.[22] Moreover, we have added to our current strength estimate approximately 300,000 men — including air defense control and warning, AAA, and surface-to-air missile personnel, as well as personnel serving or training to serve surface-to-surface missiles. Therefore, Soviet military personnel strength for mid-1956 is estimated at about 4.3 million,[23] including about 2.6 million army ground force personnel, about 825,000 air forces personnel, about 725,000 naval personnel, and up to 150,000 personnel whose subordination by service is not definitely established.[24]

97. In August 1955, the USSR announced that by the end of that year it would reduce its armed forces by 640,000 men. In May 1956, the USSR announced that by May 1957 it would carry out a further reduction of 1.2 million men. The nature of our information on Soviet military personnel strengths is such that we can expect no firm, quantitative confirmation of these announced reductions. There has been evidence of selective weeding out in the Soviet forces during the past three years, apparently as part of an effort to economize and to improve personnel standards. Fragmentary reports suggested the skeletonizing of some Soviet ground force units prior to 1955. More recently, the USSR has announced reductions in the terms of service for air, naval, and coast defense conscripts. These actions may have been related to the Soviet announcement of August 1955, but we cannot confirm that 640,000 men have actually been released, and there is as yet no evidence that first-line combat units of any arm of service have been reduced in strength.

98. In spite of the lack of evidence on actual reductions, we believe there are factors which make force reductions logical from the Soviet point of view. We estimate, therefore, that a personnel reduction on the order of 640,000 men from the uncertain Korean War peak has probably been carried out, that the Soviet forces will probably be further reduced substantially, and that the additional cut might be on the order of 1,200,000 men in accordance with the recent Soviet announcement. A personnel reduction of the magnitude announced would ease the present manpower shortage caused by Soviet efforts to expand industry and agriculture simultaneously at a time when the lower birth rate of the war years is beginning to reduce the annual increment to the labor force. In addition, the USSR almost certainly saw various political advantages in such a move, as supporting its new policy line and demonstrating Soviet interest in disarmament without the USSR's becoming involved in a disarmament agreement or being required to disclose its force levels. The increasing cost of new weapons, which, if Soviet forces were maintained at present strength and equipment levels, would involve an increasing budgetary burden, has probably argued for reducing the size of a military force which together with other Bloc forces already enjoyed marked superiority in manpower over potential enemy forces. Finally, based on probable current Soviet strategic concepts, the effectiveness of new Soviet weapons systems, and the apparent Soviet belief that the likelihood of general war has diminished, it is reasonable to suppose that the Soviet leaders concluded that their

[21] The reasons for this are given in the Note on Methodology accompanying Table 1, Appendix A.

[22] That the actual personnel strength of the Soviet armed forces increased by an indeterminate amount just prior to and during the Korean War is indicated by: evidence that beginning in 1949, a number of Soviet cadre divisions in East Germany and the USSR were increased to normal peacetime strength; that a comparable increase occurred in total Soviet military personnel strength in Germany; that in 1951 two conscript classes were called up and a number of Soviet reserve officers were recalled to active duty; and that Soviet overt military expenditures increased sharply during the Korean War.

[23] For detailed personnel strength estimates of Soviet and other Bloc military forces in mid-1956, see Appendix A, Table 1.

[24] There is some reason to believe that the total number of personnel in the last category may be as low as 85,000. For an explanation of this category, see Appendix A, Table 1, footnote 4.

very large active forces exceeded their requirements.

99. The mid-1957 order of magnitude of the Soviet armed forces,[25] assuming full implementation of the recently announced reduction of 1.2 million men, would be approximately three million. As indicated in Paragraph 97, we are not able to determine the extent and timing of the reductions announced in August 1955. It may be, therefore, that the three million total should be reduced by at least a portion of the announced 640,000 figure.

100. We have no direct evidence as to how the USSR would apportion personnel reductions among the various services.[26] We believe, however, that the Soviet leaders would allocate the bulk of the cuts to the ground forces and the remainder between the naval and air forces.[27] We estimate that during the period of this estimate, Soviet Long-Range Aviation, air defense forces, and modern submarine forces will suffer no personnel reductions. These elements, together with elements employing guided missiles, will probably receive an increasingly large proportionate share of total Soviet military personnel. Nevertheless, the Soviet leaders will probably continue to aim for balanced military forces capable of undertaking nuclear or non-nuclear warfare on either a large or small scale.

[25] See the Note on Methodology accompanying Appendix A, Table 1.

[26] The Soviet announcement throws little light on this question, stating that it was intended "to demobilize 63 divisions and separate brigades, of which three air divisions and other military units, numbering more than 30,000 men, are located on the territory of the German Democratic Republic; to disband a number of military schools of the Soviet Army; and to put into reserve 375 warships of the Soviet Navy."

[27] The Director of Intelligence, USAF, believes that the trend in the Soviet Air Force is toward an increase in military personnel requirements, as exemplified by rapid modernization of the force and by the recent significant increase in the number of Long-Range air regiments. In the absence of evidence of decreases in other air elements, he considers it highly unlikely that the Soviet Air Force will undergo personnel reductions during the period of this estimate.

Effectiveness of Soviet Forces

101. During the period of this estimate, the effectiveness of Soviet forces for modern warfare will almost certainly continue to increase, primarily due to the improved weapons becoming available in quantity, to changes in organization, and to adaptation of doctrine and tactics to fit Soviet forces for nuclear warfare. There will be increases in numbers and types of nuclear weapons, aircraft (especially bombers and all-weather fighters), long-range submarines, and guided missiles. There will also be progressive modernization of existing weapons and equipment, particularly those incorporating electronic guidance and control.

102. Limitations on the effectiveness of the Soviet armed forces during the period of this estimate will derive from deficiencies in the air defense system, together with lack of capability for long-range amphibious and long-range surface naval operations. Logistical problems will continue to place a considerable limitation upon the Soviet capability to wage intensive warfare over an extended period. These problems are due to the vast size of the USSR, the great distances from interior sources of supply to several main operational areas, the relatively inadequate road and rail network, and the acute shortage of Bloc-registered shipping.[28] In order to offset these disadvantages the USSR has maintained large forces and military stockpiles in forward areas. Stockpiles of ammunition and of other types of supplies that are consumed at a relatively constant rate are probably sufficient to maintain a force of 300 line divisions together with air and naval forces in Europe and Asia for an extended period (i. e., up to six months depending upon the scale of conflict); POL stocks are probably sufficient for a somewhat shorter period. During the period of this estimate the Soviet logistical situation will probably improve as a result of continued stockpiling and the development of a more flexible and versatile transport system. However, even in the absence of nuclear attack on the USSR, logistical problems will continue

[28] For a breakdown of the Sino-Soviet Bloc merchant fleet, see Appendix A, Table 16.

to place a considerable limitation upon capabilities for extended offensive operations, especially in the Far East.

SOVIET GROUND FORCES [29]

103. The Soviet Army ground forces have been reorganized and modernized since the end of World War II, and for the past three years their unit organization has been undergoing further changes to meet the requirements of modern warfare, nuclear or non-nuclear. Among the most significant recent changes in Soviet line divisions are: increases in the number of organic tanks, assault guns, antiaircraft artillery, wheeled vehicles, and radios; introduction of improved models of such key items of equipment as medium and heavy tanks, antiaircraft and field artillery, mortars, rocket-launchers and small arms; a general increase in the caliber of artillery of all types; the introduction into units of certain new types of equipment such as armored and amphibian personnel and cargo carriers, amphibious tanks and recoilless weapons; and increases in the authorized divisional personnel strength. These changes are intended to increase mobility and fire power, and to provide a capability for Soviet line divisions to disperse and concentrate rapidly without loss of command control.

104. During the past three years the Soviet Army ground forces have expanded their tactical doctrine and training to include training in the tactical employment of, and defense against, nuclear weapons. Small-unit training has emphasized defense against nuclear attack. There is also evidence that Soviet offensive and defensive tactics envisage the use of tactical nuclear weapons in support of Soviet ground forces. Revised Soviet tactical doctrine emphasizes mobility and maneuverability, greater initiative, dispersion, deeper objectives, reconnaissance, and individual protective measures. Soviet offensive doctrine emphasizes allocation of a substantial number of nuclear weapons for use against enemy defensive positions, air facilities, reserves, nuclear capabilities, and encircled enemy units. The assault following a nuclear attack would employ tanks and armored infantry in order to develop a maximum speed of exploitation. Doctrine for the defense emphasizes deep revetted trenches and other protective construction, dispersion in width and depth, and larger and more mobile reserves. However, the Soviet Army appears to regard nuclear weapons and tactics as supplemental to, and not replacements for, standard ground force weapons and tactics.

105. The present unit strength of Soviet Army ground forces is estimated at 175 line divisions plus 20 supporting artillery divisions, 70 AAA divisions, and 95 independent brigades.[30] Our information on the strength and equipment of Soviet units in certain border and peripheral areas is adequate, but only fragmentary information is available concerning units in the interior of the USSR. Soviet divisions in Eastern Europe have for several years been maintained at a peacetime establishment of about 70 percent of authorized personnel strength, but at a high degree of combat readiness. The strength and combat readiness of line divisions in the Soviet interior are probably lower than those of Soviet divisions in Eastern Europe and Soviet border areas. Any reduced strength Soviet line divisions, however, probably have full equipment readily available and could be made combat ready in a very short period of time.

106. We believe the manpower strength of the Soviet Army ground forces has probably been reduced within the past several years and will probably be cut further within the next year. The effect of reductions to date on unit strength levels has probably been mainly in administrative and supporting elements; further reductions would probably result in the inactivation or skeletonizing of divisions, mainly in the interior of the USSR. Were the Soviet ground forces reduced by as much as a million men, and the present ratio between line and supporting units maintained, this would permit the retention of about 100 line divisions at 70 percent of authorized strength.

[29] See Appendix A, Tables 1 and 2 for detailed estimates of the strength and composition of Soviet and other Bloc ground forces.

[30] See Note on Methodology accompanying Table 1, Appendix A.

Based on previous Soviet practice, we believe it more likely that a larger number of units would be maintained, with some of them skeletonized at full officer and equipment strengths and about 25 percent of over-all complement. On this basis, a possible force structure would be 140 line divisions, half at 70 percent strength and half skeletonized.

107. The gross mobilization potential of the Soviet Army ground forces will probably be affected relatively little by a reduction in strength-in-being. We estimate that there are at present sufficient trained reserves and stockpiled equipment to expand the Soviet Army ground forces to a total strength of 8.4 million men, including about 300 line divisions at the new tables of organization, by M+30 days, although there would probably be a considerable variation in combat readiness and effectiveness.[31] Discharges into the reserves accompanying personnel cuts would correspondingly increase the trained manpower reserve, but the time required for achieving combat readiness of the total reserve force would be lengthened.

108. During the period of this estimate, the fire power, mobility, and combat-effectiveness of Soviet Army field forces will continue to increase as their reorganization and re-equipment progresses. We estimate that major ground force equipment is being produced at 10–15 percent of the capacity of those facilities presently engaged wholly or partly in the production of ground force equipment, and that production will continue at about this rate.[32] We believe the Soviet program to develop ground force equipment will continue to reflect the demands of tactical operations under both nuclear and non-nuclear warfare conditions. By 1961 the Soviet Army ground forces will probably have available new self-propelled artillery weapons, a variety of full-tracked carriers and amphibians, improved medium and heavy tanks, additional models of rocket-launchers and recoilless weapons, and improved fire control and communications equipment. It is also probable that during the period guided missiles will be added to the equipment of Soviet line units, and that some types of tactical nuclear weapons will become part of the Soviet ground force arsenal.

109. *Airborne Forces.* The USSR has sizable airborne forces in being, estimated to comprise 10 divisions and a total strength of about 100,000 men. Soviet airborne capabilities are being increased through improvements in equipment and techniques, as well as by intensive small unit training. Improved personnel and cargo parachutes have been developed. Since 1953 the USSR has displayed two new assault-type helicopters, one with a normal payload estimated at 3,500 pounds (16 men with combat equipment), and the other with a normal payload estimated at 8,800 pounds (40 men with combat equipment). By 1961, the USSR could develop helicopters with payloads up to about 30,000 pounds. Approximately 500 CAB and COACH twin-engine piston transports are currently included in the Aviation of Airborne Troops. A new medium jet transport, the CAMEL, and a new twin-engine turbo-prop combat cargo aircraft which may be an assault transport have appeared. The USSR could convert BULL bombers retired from long-range aviation to troop and cargo carriers, and within the period will probably have substantial numbers of transport aircraft with improved range and capacity.

110. *Security Forces.* Soviet internal security forces, controlled by the Ministry of Internal Affairs, number about 400,000. These troops are a select group, well trained and equipped, and provide a significant increment to Soviet military strength-in-being. However, their primary responsibility for maintaining internal control would probably prevent their becoming available for combat operations outside the USSR. About 150,000 are border troops, disposed along all accessible land and sea frontiers. The remaining 250,000 include troops responsible for suppressing any resistance in the country, for guarding labor camps

[31] For detailed estimates of Soviet and other Bloc trained reserves and ground mobilization potential, see Appendix A, Table 3.

[32] For detailed estimates of current and future Soviet production of major ground force equipment, see Appendix A, Table 11.

and shipments of prisoners and strategic cargoes, and for maintaining the security of high-level government and military communications.

SOVIET AIR FORCES [33]

111. Although in World War II the USSR employed its air forces primarily in the ground support role, increasing emphasis has since been given to the development of the interceptor and long-range bombing arms. In addition, statements by Soviet military leaders over the past several years have reflected their growing appreciation of air power. We estimate the over-all actual aircraft strength of Soviet military air units in mid-1956 at nearly 17,500. This is probably about 85 percent of authorized strength. Continued replacement of piston medium bombers by jet medium and jet and turbo-prop heavy bomber types and an increase in numbers of jet all-weather fighters will probably constitute the most significant improvements in Soviet Air Force strength during the period of this estimate. We estimate that over-all actual aircraft strength in Soviet operational units will remain about the same during the period, reaching approximately 18,500 aircraft by mid-1961.

112. The Soviet aircraft industry has accounted for about 95 percent of total Bloc aircraft production of fighter and bomber aircraft.[34] We estimate that about 8,500 aircraft were produced by the USSR during 1955, of which about 5,000 were bombers and fighters. We estimate that during 1954 and 1955 the Soviet aircraft industry was operating at about 25 percent of capacity. Production through 1961 is not expected to vary substantially from the 1954–1955 rate, although fluctuations are expected as new models are introduced.[35]

113. Soviet Fighter Aviation of Air Defense will be strengthened considerably during the period of this estimate by the introduction of new fighters with improved performance, increases in numbers of fighters equipped with airborne intercept radar, and the probable addition of air-to-air guided missiles to the armament of some fighters. Although the FRESCO day fighter is now the principal equipment of Soviet Fighter Aviation of Air Defense, the transonic FARMER day fighter and the FLASHLIGHT all-weather fighter are rapidly being phased into operational units. We estimate that an improved supersonic day fighter based on the FARMER will be in operational use in 1957 and that a supersonic day and all-weather fighter will be introduced in 1959. By 1961, all-weather fighters will probably comprise more than 50 percent of the total Soviet fighter force; we estimate that at present this force numbers about 9,300 jet fighters, including about 1,000 all-weather fighters, and that in mid-1961 total Soviet fighter strength will be about the same, but will include 4,800 all-weather fighters.[36]

114. We estimate that the Soviet leaders, in order to acquire a greater capability for strategic air operations, have committed themselves to a further build-up and modernization of Soviet Long-Range Aviation over the next few years. The BULL piston medium bomber, which is now obsolescent, is being replaced by the BADGER jet medium bomber and the BISON jet and BEAR turbo-prop heavy bombers. The assignment of BADGER aircraft to operational units, which began in 1954, has proceeded more rapidly than previously estimated, and will probably bring BADGER units to their full complement by mid-1957. The assignment of BISON and BEAR aircraft to operational units is believed to have begun in 1955 but has apparently proceeded more slowly than previously estimated.

115. Based on a judgment as to what Soviet planners probably estimate their requirements to be, and on recent increases in the number of air regiments, we now estimate that the USSR is building toward a force of about

[33] For detailed estimates of the aircraft strength of Soviet and other Bloc air forces during the period of this estimate, see Appendix A, Tables 4, 5, 6, and 7.

[34] For comparisons of Soviet Bloc–NATO and USSR–US aircraft production, 1946–1955, see Appendix A, Tables 12 and 13.

[35] For estimated Soviet and Bloc aircraft production, 1955–1961, see Appendix A, Table 14.

[36] For estimated performance characteristics of Soviet fighters see Appendix A, Table 8.

1,500 modern bomber-type aircraft in Long-Range Aviation by mid-1960. We also believe that, in the light of probable Soviet optimum requirements, including those for attack on the continental US, a likely composition of this force by type would be about 800 heavy bombers (500 BISON and 300 BEAR) and about 700 BADGER medium bombers. Soviet aircraft production facilities are more than adequate to meet this requirement, although the proportion of aircraft production facilities assigned to heavy bomber production would have to be increased. Many unknown factors, including the degree of future Soviet success in the guided missile field, could lead to Soviet decisions which would alter both the size of this force and the balance between types of aircraft. Moreover, the introduction of aircraft designed primarily for a tanker role or the presence in operational units of some bombers in alternative tanker-bomber roles could affect the size and composition of Soviet Long-Range Aviation. Thus, the following table of estimated numbers of bombers in operational units of Long-Range Aviation through the period is the best that can be made at this time, but the factors of uncertainty are considerably greater during the later years: [37]

	mid-1956	mid-1957	mid-1958	mid-1959	mid-1960	mid-1961
BULL	756	380	190	---	---	---
BADGER	475	700	700	700	700	700
BISON	35	90	220	400	500	500
BEAR	30	130	250	300	300	300

This represents a considerable downward revision from our previous estimates of the number of heavy bombers in operational units

[37] 1. The Assistant Chief of Staff, Intelligence, Department of the Army, does not concur in the estimate of heavy bomber strength contained herein, except in the case of those listed for mid-1956.

2. The force total of 1,500 bomber aircraft, and the distribution of these figures between the various types involved, is based almost entirely upon what US planners consider to be a near optimum requirement for an attack on the United States. There is no evidence that Soviet leaders have established a requirement on this order as a goal. Neither is there evidence that the Soviet leaders have established mid-1960 as the date by which this, or any other goal, is to be achieved.

3. The estimate that Soviet leaders will attempt to achieve such an optimum capability by mid-1960 is not supported by the conclusion that Soviet policy will emphasize political and economic penetration, as expressed in Paragraphs B and C of the conclusions of this estimate, and in Paragraphs 158, 159, and 161 of the discussion. Neither is the development of such a force in consonance with the conclusions expressed in Paragraph 94 that the USSR will regard the risks involved in the deliberate initiation of general war as unacceptable.

4. Unless the USSR intends to initiate a general nuclear war in the period 1960–1961, it appears unlikely that the resources required to develop an optimum capability would be committed. The useful life of such a force would be limited, since it would face early obsolescence with the advent of Intercontinental Ballistic Missiles, and even in the interim period would be highly vulnerable to improved US air defenses. It, therefore, seems more likely, in the absence of a decision to initiate general war, that the USSR would establish something less than an optimum force as a goal for the purpose of deterrence, and would not produce the numbers of heavy bombers cited herein.

5. Other factors militating against the acceptance of the estimates of bomber strength included herein, are:

a. There is no evidence that facilities currently producing BISONS are increasing production, or that the additional facilities required to meet this program are being converted to BISON production.

b. Despite firm evidence that both BISON and BEAR production over the past year has fallen far short of that estimated just over a year ago (NIE 11–3–55), the BISON forecast for mid-1960 included herein represents an increase of 25 percent over the end strength estimated in NIE 11–3–55, and the BEAR forecast for mid-1958 and thereafter is unchanged.

c. Adequate consideration has not been given to the plant capacity required to produce compatible tankers and jet transports to meet probable requirements.

6. The Assistant Chief of Staff, Intelligence, Department of the Army, therefore, concludes:

a. That it is probably within the capability of the USSR to produce the aircraft estimated herein if Soviet leaders have already decided to do so, and have initiated steps, not now evident, to expand production.

b. That it is unlikely that the force described herein will be developed.

c. That there is insufficient evidence to warrant a conclusion as to the future strength of Soviet Long-Range Aviation.

in the period to mid-1958.[38] This results from new evidence which indicates that, probably at least in part because of production difficulties, BISON and BEAR production during the past year has been at a considerably lower rate than previously estimated, with a total of only about 40 aircraft of each type produced to 1 July 1956.

116. Soviet Long-Range Aviation will probably continue with its present aircraft types, except the BULL, throughout the period.[39] Improved models of both the BADGER and the BISON will probably have appeared by the end of 1957. The USSR is capable of producing by 1961 a new medium bomber with "supersonic dash" capabilities, and such an aircraft may appear in units at about that time. We have no intelligence on Soviet development of a nuclear-powered bomber; we believe that such an aircraft will not be in operational units during the period of this estimate.

117. We now have evidence that the USSR is developing an inflight refueling system, and we believe that during the next few years it will achieve a substantial inflight refueling capability. We have no evidence of the existence of a Soviet aircraft type designed primarily for tanker use. The BULL, BADGER, or CAMEL could be modified for use in the tanker role. Both BISON and BEAR aircraft could have been constructed to permit conversion within a matter of hours from a bomber to a tanker role, and *vice versa*. However, of known Soviet aircraft, only tanker versions of the BISON or the BEAR would be fully compatible with the BISON bomber. On the other hand, the USSR may elect to develop a new aircraft primarily for the tanker role. In any case, we estimate that in order to support a heavy bomber striking force of the magnitude estimated for the 1960–1961 period, the USSR would probably require on the order of 350–400 aircraft employed in the tanker role.

118. Airfield construction in the USSR and the Satellites during the postwar period has kept pace with demands created by the introduction of high performance aircraft. Approximately 1,600 airfields are in use in the Soviet Bloc, of which about 285 (165 in the USSR and 120 in the Satellites) have hard surfaced runways of 5,000 feet or longer. Many of the military airfields now being built have runways at least 7,000 feet long, and some are 8,000 feet or more. Many airfields in the Satellites are being equipped with night lighting, radio navigation aids, radar, increased POL facilities, and improved structures. We believe that similar improvements are being made on airfields in the USSR, and that the growing network of modern, well-equipped air facilities will keep pace with Soviet Bloc air capabilities during this period. We also believe that airfield construction will continue to be pressed in the Far East and in Soviet Arctic areas.

119. Combat effectiveness of Soviet military aviation is, on the whole, below that of the US. The chief limiting factors have been lower average crew proficiency, lower standards of maintenance and training, and lack of certain aircraft types. During this period the increasing numbers of new or improved fighter and bomber types, together with training appropriate to these types, will lead to a significant increase in combat effectiveness. With cumulative improvements in the capabilities of career personnel, over-all combat proficiency will almost certainly reach a high level during the period of this estimate. Deficiencies in long-range, night and all-weather operations will continue to be reduced.

SOVIET NAVAL FORCES [40]

120. During recent years the Soviet Navy has been greatly strengthened by an intense and rapid building program, concentrated on light

[38] NIE 11-3-55, "Soviet Capabilities and Probable Courses of Action Through 1960" (17 May 1955), Paragraph 116, and NIE 11-56, "Soviet Gross Capabilities for Attack on the US and Key Overseas Installations and Forces Through Mid-1959" (6 March 1956), Paragraph 20.

[39] For estimated performance characteristics of Soviet bombers, see Appendix A, Table 9.

[40] For detailed estimates of the strength, composition, and dispositions of the Soviet and other Bloc naval forces in mid-1956 and mid-1961, see Appendix A, Table 10.

cruisers, destroyers, and submarines. The Soviet submarine fleet is now the largest in the world and is still growing; over half its strength consists of long-range craft of which a significant and increasing proportion are modern types. We estimate the main strength of the Soviet Navy in mid-1956 at 28 cruisers, 213 destroyer types, and 445 submarines. These totals include vessels of postwar design numbering 15 light cruisers, 95 fleet destroyers, 65 destroyer escorts, 202 long-range, and 22 medium-range submarines. During the past year, net destroyer strength has increased by approximately 70 and net submarine strength by approximately 70.

121. At the present time, the Soviet Navy is also estimated to include nearly 1,700 minor war vessels and a number of "overage" major war vessels. Fourteen major surface vessels, including battleships, light cruisers, and destroyers, are more than 20 years old, and 106 submarines are 15–20 years old. We believe the Soviet Navy's share of the announced force reductions would be taken largely from among these "overage" vessels, and from minor craft. However, we estimate that any decommissioned units the USSR chose to keep in reserve status could again be ready for service by M+180.

122. Soviet naval construction is currently estimated at about 200,000 standard displacement tons, which represents slightly more than one-third of the capacity of Soviet shipyards and one-fifth of total Bloc capacity.[41] The USSR will probably continue to place primary emphasis on the construction of long-range submarines, although the construction of conventional cruisers and destroyers may also continue through the earlier years of the period. Battleships and carriers could be built in all fleet areas except the Far East, but there is no evidence of a Soviet intention to construct these types. It is probable that toward the end of the period, guided missiles and rockets will be adapted for naval use as surface-to-surface and surface-to-air weapons, and unconventional vessel designs may appear as these weapons become available.

123. The Soviet Navy is now concentrating on the construction of two long-range submarine types, developed since World War II and equipped with snorkel. The "W" class has an operating radius under combat conditions of about 4,700 n.m.; the "Z" class about 6,700 n.m. By early 1956, an estimated 165 "W" and 18 "Z" class submarines had joined the fleets, as well as 13 postwar-designed, medium-range "Q" class boats. The building rate for 1956 is estimated at 82 "W", 8 "Z", and 18 "Q" class boats.

124. In view of the rate at which Soviet submarine construction facilities have been expanded in recent years, a substantial increase in the current submarine order of battle will probably take place over the next several years. Since estimated annual Soviet submarine building capacity is about 160 long and medium-range boats, the USSR could build about 800 over the next five years. However, we estimate that actual production will be about 130 submarines in 1957, and that it will be reduced to about 105 boats in 1958, due to the impact of the estimated nuclear-powered submarine program. If production continued at the estimated 1958 rate for the remainder of the period, cumulative production to mid-1961, taken in conjunction with such factors as the phasing out of older types and the probable adaptation of present submarines to newer weapons systems, would result in a force of approximately 900 boats of all types, including about 800 long and medium-range boats of postwar design. However, we have no intelligence to indicate that the USSR will in fact produce this number of submarines or to indicate the planned future strength of the Soviet submarine force.

125. The operating efficiency of the Soviet Navy, while still below that of the US Navy in some fields, is quite high and will continue to improve during this period. Little is known of the operating efficiency of the submarine force, although in recent years training has been intensified, particularly in long-range operations.

[41] For detailed estimates of current and future Soviet naval vessel construction, see Appendix A, Table 15.

126. Several important developments in the Soviet Navy are likely during the period of this estimate. One is the probable appearance of some nuclear-powered submarines. The USSR also has the technical capability to construct or modify long-range submarines for launching guided missiles, and may already have done so. We expect that an improved wakeless torpedo with acoustic homing device and influence exploder will probably be available around the middle of the period; we expect the appearance of an offensive sea mine employing acoustic, magnetic, and pressure-influence firing mechanisms in combination; and we believe the USSR is at present capable of adapting nuclear warheads to mines and torpedoes. We estimate that early in the period Soviet antisubmarine forces will have improved sonar detection gear in association with attack computers for use with depth-charge throwers.

127. The principal weakness of the Soviet Navy derives from the wide separation of the sea frontiers of the USSR, and from its inability to control the sea routes between these areas. The USSR is thus deprived of the strategic mobility traditionally enjoyed by naval powers, and is compelled to maintain four separate fleets together with their supporting facilities. The inland waterway system connecting the White and Baltic Seas now permits the interchange of vessels up to the size of small destroyers and including all current submarine types. During this period, possibly by 1957, improvements in inland waterway systems will extend this interchange capability to reach the Black Sea. However, parts of these waterway systems are open only on an average of five months a year because of weather conditions. Increased use of the Northern Sea Route, which is open for a six to eight-week period in the summer, may also improve the situation. The lack of adequate supply lines to the Northern and Far Eastern areas is an additional handicap. Limitations on sustained offensive operations derive from the land-locked position of the fleets in the Baltic and Black Seas (containing roughly 60 percent of Soviet naval strength), the exits from which are controlled by the NATO Powers, and from the lack of advanced bases. Other current limitations are the lack of auxiliary vessels suitable for underway logistic support, the paucity of experience in long-range operations, and the apparent lack of long-range reconnaissance aircraft.

128. *Naval Aviation.* Soviet naval aviation, comprising nearly 20 percent of total Soviet air strength, has increased in stature within the military establishment, and is now the second largest naval air force in the world. It receives a relatively high priority in the allocation of new aircraft, equipment, and weapons. Soviet naval aviation is engaged in a concentrated training program which stresses offensive operations against enemy naval forces and the air defense of naval bases and forces. During the period of this estimate, Soviet naval aviation is expected to remain at approximately constant numerical strength, while continuing its modernization program. Improved jet light bombers and all-weather fighters will probably be introduced, and possibly long-range bombers for attack and reconnaissance.

VI. SOVIET MILITARY CAPABILITIES

129. The military strength of the Soviet Bloc is far superior to that of all other states on or near the Eurasian continent. These states could be defeated, separately or in combination, unless US armed forces joined in their defense. However, the Soviet leaders could never be sure that the US would not join in the defense of these states or that it would confine its military intervention to a strictly localized area. Indeed, they probably estimate that, at least in certain areas, the US would not so confine its military action. Consequently, they must take into account the possibility that any localized or limited war would develop into general war.

130. It would be impossible, within the scope of this paper, to analyze the capabilities of the USSR and of the Bloc generally for limited or localized war in various areas and involving various degrees of US military participation. In this section, therefore, we discuss only Soviet military capabilities for general war and we consider them in the light of our estimate of probable Soviet strategy for the initial phase of such a war.[42]

SOVIET STRATEGY FOR THE INITIAL PHASE OF A GENERAL WAR

131. In view of the transition which is taking place in the Soviet military establishment, it is probable that the Soviet strategic concepts which would govern how the USSR would fight a general war are also in flux. However, the USSR must appreciate that US nuclear capabilities would be the principal element in the Western military threat to Soviet security in the event of general war. Consequently, Soviet military strategy almost certainly places first emphasis on forestalling or at least neutralizing any US nuclear attack.

132. In planning for the contingency of general war, the Soviet leaders might hope that through their political action prior to the time war broke out, the USSR would have imposed such inhibitions on the US as to prevent the latter from initiating the use of nuclear weapons. Such a development would be greatly to the Soviet advantage, especially while the US retains a substantial nuclear superiority, including a favorable geographical deployment of its nuclear strength vis-a-vis the USSR. More likely, however, the Soviet leaders would believe that the prospects for excluding US use of nuclear weapons would be too slight to risk the possibility that the US would deliver the first nuclear blow. Therefore, we believe Soviet war plans would provide that, given a decision to launch general war, it would be initiated by strategic nuclear attacks.[43]

[42] It should be emphasized that we estimate (Paragraph 94) that the Soviet leaders probably do not regard the deliberate initiation of general war as a presently admissible course of action.

[43] 1. The Assistant Chief of Staff, Intelligence, Department of the Army, does not concur in the estimate that, given a decision to launch general war, it would be initiated by strategic nuclear attacks.

2. Since, as has been estimated in Paragraph 94, Soviet leaders probably do not now regard the deliberate initiation of general war as a presently admissible course of action, such a war occurring during the period would probably result from the enlargement of a limited or localized war. The enlargement would at some point reach a scale of war between the US and the USSR which would then be called general war. In this chain of events general war is not a question of decision, but one of definition.

3. The decision as to the initiation of strategic nuclear attacks, however, is one which must be made during the progress of enlargement. We believe that, in view of the mutual destruction inherent in such attacks, the USSR would avoid initiation of them by every means possible and seek instead to achieve its objectives through limited warfare.

4. The Assistant Chief of Staff, Intelligence, Department of the Army, believes that Soviet strategic concepts emphasize maximum flexibility, and that war plans have probably been developed to meet a number of contingencies ranging from a non-nuclear war through various degrees of limitation on nuclear weapons to the extreme of an all-out nuclear exchange. That the latter is not the primary element of their strategy is indicated by the following facts:

(Footnote continued on page 42)

133. The necessity of forestalling or neutralizing a US attack would also make surprise in the initial nuclear attack a vital ingredient of Soviet strategy. In the Soviet view, surprise would be essential in order to reduce as much as possible the nuclear retaliation which could be launched against the USSR by Western forces deployed around the Soviet periphery and in the continental US. Consequently, we believe that preparations and redeployment of forces which could give warning of the decision to proceed to general war would be held to a minimum in order to avoid compromising the initial air strikes. In coastal areas, missiles launched from submarines could be an important supplement to nuclear attacks by aircraft, but limitations on target coverage and the risk of premature disclosure of intent would probably inhibit their large-scale use in an initial surprise attack.

134. The Soviet leaders would probably regard an attack by ground and tactical air forces against NATO forces in Western Europe at an early stage as essential to prevent NATO deployment and mobilization, and to disrupt action by NATO's tactical air forces. At present, the USSR has large ground and tactical air forces deployed in Germany which would not require reinforcement by additional units in advance of offensive action. We believe that the USSR would plan to commit these forces to an offensive against NATO dispositions in West Germany as soon as possible, consistent with maintaining surprise for the initial air assault against the US and its overseas bases. Under the most favorable circumstances from the Soviet point of view, advances by these forces could be undertaken as soon as the West had obtained warning of the Soviet strategic air attack. However, during some phases of the annual training cycle, a period of several days might be required to deploy these forces for attack. Large numbers of Soviet submarines would probably move to interdict US reinforcement of overseas forces and in particular to isolate the European theater.

135. We believe that, in its planning for the initial phase of a general war, the USSR would not assign the same priority to campaigns in the Middle and Far East. Appropriate targets in these areas would, of course, be embraced in the Soviet plan of initial air attack, but campaigns by Soviet ground, amphibious, or surface naval forces would probably be delayed. The USSR might regard an attack to seize the Turkish Straits as of early high priority, but we believe that other major campaigns would be held up until the USSR could assess the results of the initial nuclear exchange.

136. In summary, we believe that Soviet plans for the initial phase of general war would be directed toward the following military objectives:

a. To destroy or neutralize Western nuclear capabilities, wherever deployed, by massive nuclear attacks.

b. To bring the USSR out of the initial exchange in the better relative position, by making a maximum air defense effort against Western nuclear air attacks.

c. To destroy as much as possible of the ready NATO forces deployed in Western Europe and to prevent mobilization of NATO's full potential.

d. To interdict US reinforcement of overseas forces and in particular to isolate the European theater.

(Footnote continued from page 41)

a. Soviet ground forces have been extensively modernized and re-equipped so as to improve their capability for mobile land warfare.

b. The Soviet naval program, with its concentration on submarines, has been aimed primarily at developing a capability to interdict US reinforcement of Eurasia.

c. There has been little or no evidence of extensive Soviet effort to develop the carrier task forces, or long-range amphibious forces essential to a strategy envisaging direct attack on the United States.

d. The development of long-range airborne forces has apparently been accorded low priority.

e. The apparently low priority accorded the development of an inflight refueling capability.

f. Low-yield nuclear weapons and devices have been predominant in the Soviet nuclear test program.

g. There is substantial evidence of a major Soviet effort in the field of short and medium range surface-to-surface missiles.

STRATEGIC AIR CAPABILITIES [14]

137. The USSR is now capable of undertaking concurrent air attacks with nuclear weapons against targets in the US, the UK, continental Europe, North Africa, the Middle East, Japan, Alaska, and the Asiatic island chain. This capability will improve during the period of the estimate, as the Soviet nuclear weapons stockpile and the number of high performance, long-range bombers continue to grow. Present Soviet capabilities for attack on continental US are restricted by the relatively small numbers of operational BISON and BEAR bombers, the limited availability of megaton-yield weapons, the limited capacity of forward bases, and the probable lack of a substantial operational inflight refueling capability. We estimate, however, that Soviet capabilities for air attack on continental US will increase substantially as the period advances. During the period of this estimate, the capacity of the forward staging areas and the Leningrad base complex could be increased sufficiently to permit the simultaneous launching of the entire long-range bomber force from these areas. Moreover, we believe that the USSR is now acquiring an inflight refueling capability adequate to permit the launching of a substantial number of jet heavy bombers from interior bases on two-way missions against the US. Toward the end of the period, high-yield nuclear weapons could be available for most of the Soviet long-range bombers.

138. We are unable to estimate what proportion of the available force of Soviet bomber aircraft might be launched against the US and what proportion against overseas targets. The Soviet planners would attempt to distribute these initial attacks in such a way as to insure the optimum combination of weight and surprise against all areas where US and UK retaliatory capability was deployed. Nearly all of the heavy bomber force would almost certainly be used against the continental US in an attempt to destroy as much of US war-making potential as possible consistent with the assignment of first priority to US retaliatory capabilities. The scale of attack with bomber aircraft would also depend upon the availability and effectiveness of other forms of delivery which could appear as the period progresses.

[14] For a fuller discussion of this subject, see NIE 11-56, "Soviet Gross Capabilities for Attack on the US and Key Overseas Installations and Forces Through Mid-1959," published 6 March 1956.

SURFACE-TO-SURFACE GUIDED MISSILE CAPABILITIES [15]

139. We estimate that in view of the extensive Soviet guided missile program and the stage of development estimated to have been reached, Soviet missile capabilities will grow rapidly during the period. If the USSR in fact develops the surface-to-surface guided missiles which we have estimated to be within its capabilities, the following possibilities for attack would exist during the period, and missiles might replace or supplement bomber aircraft for attack against some areas:

a. Short and Medium-Range Missiles (up to 900 n.m.). In 1956, the USSR could have a small number of ballistic missiles able to reach, from launching sites within the USSR, all of Western Europe (except the Iberian peninsula), the UK, and the Middle East except the southern part of the Arabian peninsula. In the Far East, these weapons could reach targets in Japan and Alaska. If the USSR elected to employ launching sites on the periphery of the Bloc, these ranges could be extended to cover Ireland, much of Spain, the Tunisian, Libyan, and Egyptian coasts, much of the Southeast Asian peninsula, Luzon, Taiwan, and the Ryukyus. These missiles could carry small and medium-yield nuclear warheads, and in the period 1958–1959 could be fitted with high-yield nuclear warheads. At present, it would also be technically feasible for the USSR to attack targets within the US with missiles launched from submarines, and the USSR could have for this purpose a subsonic guided missile with a nuclear warhead and a range of 500 nautical miles.

[15] Material in this section is based on NIE 11-6-54, published 5 October 1954, and NIE 11-12-55, published 20 December 1955. A new estimate on Soviet guided missile developments, NIE 11-5-56, will appear in October 1956.

b. *Intermediate Range Missiles (1600 n.m.).* In 1958–1959,[16] the USSR could have a small number of ballistic missiles, able to reach, from launching sites within the USSR, targets in Greenland, Iceland, Europe, North Africa, the Middle East, most of India, Luzon, Taiwan, the Ryukyus, Japan, Alaska, and part of Canada. The use of launching sites on the periphery of the Bloc would extend these ranges to include all of continental Asia and the Philippines. These missiles probably could be equipped with large-yield nuclear warheads.

c. *Intercontinental Missiles (5500 n.m.).* In 1960–1961,[16] the USSR could have a small number of ballistic missiles equipped with large-yield nuclear warheads able to reach, from launching sites within the USSR, the major target areas of the western world including all of the US.

AIR DEFENSE CAPABILITIES

140. The Soviet leaders probably believe that the defense of the USSR against nuclear attack would depend in large measure upon the success of an initial Soviet assault on Western retaliatory capabilities. But the USSR has large air defense forces whose task would be to reduce the effectiveness of counterattack by Western forces which escaped destruction in the initial Soviet attacks. The air defense system of the USSR provides for the employment of the 3,350 aircraft in the Soviet Aviation of Air Defense and for the potential employment of the remaining 7,700 Soviet and Satellite fighters. In addition, the Chinese Communists and North Koreans have about 1,800 fighters which could make some contribution to the defense of the Soviet Far East. We believe that the air defense role of the fighters of Tactical and Naval Aviation would be given priority in the early stages of a general war. We estimate that Soviet PVO and field forces now possess a total of over 17,000 antiaircraft artillery pieces, and that significant developments in both high and low altitude weapons have been made over the last several years. The USSR still relies heavily upon radar-directed antiaircraft artillery, but guided missiles are now being added to the air defenses of Moscow and probably to other areas of key strategic importance in the USSR. By the end of the period, we estimate that surface-to-air missiles will have largely replaced heavy antiaircraft artillery in the static defense of the more important strategic targets. Even earlier, the air-to-air missile will probably have enhanced the capabilities of fighter defense forces.

141. We estimate that Soviet air defense capabilities in areas of dense air defense concentration (European USSR, Eastern Europe, and the Maritime-South Manchuria area of the Far East) are as indicated below. Capabilities in other areas are probably considerably less.

a. *Against bombers between 5,000 and 35,000 feet in daylight and clear weather,* we believe the air defense system is capable of inflicting severe losses on high-speed jet bombers. At higher altitudes this capability would begin to diminish, and above 45,000 feet would fall off markedly. Against bombers penetrating peripheral areas at high speed and minimal altitude the effectiveness of the defenses would be very low.

b. *Against multiple-pronged penetrations utilizing altitude stacking, diversionary tactics, and electronic countermeasures,* we believe the air defense system is subject to disruption and saturation, which would progressively reduce its effectiveness.

c. *Against air attacks conducted under poor visibility conditions,* we believe the air defense system is at present capable of offering only limited resistance, owing to the inadequacy of equipment and training for all-weather operations. The rapid introduction of all-weather fighters into operational units and the advent of surface-to-air missiles are, however, giving

[16] These dates are estimated to be the earliest probable dates by which the several missile types could have been operationally tested and be ready for series production. By these dates, small quantities of missiles could have been produced and placed in the hands of trained personnel of one operational unit, thus constituting a limited capability for operational employment. However, an additional period, which would vary according to missile type, would be required before missiles could be produced in quantity and additional units trained and deployed.

the USSR an increasing capability in this field.

142. During the period of this estimate, Soviet air defense capabilities will almost certainly be substantially increased, due to greater operational experience and the introduction into the defensive forces of additional supersonic and all-weather fighters, new fighter types, improved early warning and GCI equipment, electronic countermeasures, additional guided missiles, and improved missile types. Despite these improvements, however, we estimate that Soviet air defenses will still be vulnerable to exploitation by penetration forces.

OFFENSIVE CAPABILITIES IN WESTERN EUROPE

143. We have estimated above that, should the USSR seek to initiate a surprise nuclear attack against Western retaliatory capabilities, the USSR would plan to defer mobilization or redeployment of major forces for other campaigns until after the initial assault. Once the initial nuclear attacks were launched, the highest priority would probably be given to a ground, air, and naval offensive against Western Europe in order to destroy the bases and forces concentrated there, to prevent a NATO build-up, and to isolate the area. The forces in East Germany and adjacent areas would under present conditions probably be regarded by the Soviet commanders as adequate to initiate such an offensive. These forces are capable of rapid movement and the tactical employment of nuclear weapons.

144. Air support of Bloc offensive operations in Western Europe could come from the approximately 5,200 aircraft presently stationed in East Germany and the Satellites, with reinforcements available from the nearly 4,900 aircraft stationed in the Western USSR. However, a large proportion of these aircraft are fighter interceptor types in units which currently have an air defense responsibility as well as a tactical support role. This responsibility would probably to some degree limit the availability of fighter aircraft for tactical support in the initial phase of the land campaign. The estimated increase in Satellite air defense capabilities during this period will probably reduce this limitation. Even at present, however, the USSR and the Satellites have about 1,600 jet light bombers available in East Europe and Western USSR for use against targets in Europe.

OFFENSIVE CAPABILITIES IN THE FAR EAST

145. Soviet capabilities for long-continued full-scale war in the Far East are considerably limited by the capacity of the Trans-Siberian railway, the only route by which supplies in large amounts could be brought from other parts of the USSR. The USSR has about 30 divisions in the Far East, together with nearly 4,000 aircraft and a sizeable naval force, and with stockpiles of supplies sufficient for a considerable period of combat. These Soviet forces could, alone or in conjunction with Chinese Communist forces, renew hostilities in Korea. They could probably launch an invasion of Japan with an initial airborne assault of one division and an initial amphibious assault of up to three divisions, with a follow-up waterborne force of five or six divisions. The same amphibious lift could be employed in other areas of the Far East within range of land-based aircraft. Airborne and amphibious attacks on a smaller scale could also be launched against Alaska.

AIRBORNE CAPABILITIES

146. Utilizing only those transports subordinate to the Aviation of Airborne Troops, the USSR could lift about 9,000 airborne troops with one drop on D-Day, or about 14,000 with two drops, within a radius of 500 n.m. In a five-day operation approximately 23,000 to 25,000 troops could be lifted. This lift capacity could be increased by about 1,800 troops for every 100 aircraft made available from the 3,000 transports of Soviet Civil Aviation and other components of military aviation, and could be further augmented by the use of the 100 large helicopters of the Aviation of Airborne troops. We estimate that Soviet airlift capabilities will probably increase through 1961, but at least during the early part of the period most airborne troops would have to be carried by the low-performance CAB

transport (with characteristics approximating the C–47), and this would place a limitation on the effectiveness of airborne operations. The allocation to airborne use of BULL aircraft converted for transport purposes could increase the Soviet capability to transport troops by air by an additional 5,000 to 6,000 troops per 100 aircraft converted.

NAVAL CAPABILITIES

147. At the present time, the principal offensive capabilities of the Soviet Navy are in submarine warfare, operations of cruiser-destroyer task forces, air operations utilizing shore-based naval aircraft, and mine warfare. These capabilities will continue to improve throughout the period due to the building program, technological development, and intensive training. The Soviet Navy will remain capable of mounting short-haul amphibious lifts of considerable strength, but will have little or no significant long-haul amphibious capability during the period of this estimate.

a. The Soviet submarine force will greatly increase its capability to undertake offensive patrols and mining operations along most of the world's strategically situated sea lanes, and possibly to launch guided missile attacks against land targets.

b. Major Soviet surface units and supporting shore-based naval aircraft will probably continue to increase their capability to undertake offensive operations in Bloc coastal areas, especially in the Baltic and Black Seas, and to protect the seaward flank of ground campaigns. The advent of ship-launched guided missiles, as well as air-to-surface guided missiles, would further enhance these capabilities.

c. From existing airfields, Bloc jet light bombers could range over the entire North Sea and the English Channel; seaport areas of France, the UK, and Scandinavia; all but the western end of the Mediterranean; and the Pacific Ocean area embracing Japan, Okinawa, and central Luzon.

d. The USSR has an extensive capability to employ mine warfare, possibly including nuclear mines, to interfere seriously with allied sea communications. In the European area, this effort could include all the ports and approaches of the UK and Western Europe. In the Far East, most of the vital allied port areas and sea lanes around the perimeter of the Bloc could similarly be attacked.

VII. THE SOVIET ESTIMATE OF THE WORLD SITUATION

IDEOLOGICAL FACTORS

148. The Soviet leaders' view of the world situation is strongly influenced by Communist ideological conceptions and these remain basically intact. This predisposes them to view Western actions and developments in terms of an irreconcilable struggle between the Communist and non-Communist worlds. While this conception in part determines Soviet long-term objectives, it does not impose rigidity in choice of tactical objectives and methods. Stalin's successors have demonstrated an ability to respond realistically to the actual play of political forces in the world. They have made it a principal point of criticism of Stalin's leadership that he was too narrow and inflexible in his tactics. A more practical appraisal of the world situation seems to characterize the present Soviet leadership, even though the world is still viewed in terms of the historical forecasts contained in official Communist ideology.

INTERNAL FACTORS

149. In the preceding sections of this estimate we have considered political, economic, and military factors in the Soviet situation which will affect the USSR's position and capabilities vis-a-vis the non-Communist world over the next several years. The Soviet leaders' own weighing of these factors appears to convince them of the general strength of their position. They apparently believe that they are able to cope effectively with the internal political problems Stalin left them, that they can overcome weaknesses which might slow the growth of the Soviet economy, and that the USSR's industrial strength is now such as to permit them a freer hand in domestic and foreign policy. They probably also believe that the Soviet military establishment is adequate, now that the USSR has acquired a nuclear capability, at least to deter resort to major military action by the Western Powers. Consequently, the Soviet leaders are likely to approach foreign policy decisions during the course of this estimate with a sense of confidence in the strength and potentialities of the Soviet system.

EXTERNAL FACTORS

150. Paramount in Soviet calculations regarding the non-Communist world is almost certainly the enormous physical strength and potential of the US as the principal restraint upon Soviet freedom of action in the international sphere. References to the US in the speeches of the Soviet leaders at the 20th Party Congress revealed a continuing awareness of the great gap which still separates Soviet industrial capacity from that of the US. In the military sphere, the Soviet leaders, despite the gains they have made in advanced weapons, almost certainly believe that at present the USSR should not deliberately incur the hazards of general war with the US. Moreover, they probably consider that thus far the ability of the Western alliance to maintain a common purpose toward the USSR in the face of distractions and Soviet divisive maneuvers, though weakened, has not been fundamentally shaken.

151. Consequently, taking presently existing power factors alone into consideration, the Soviet leaders must see formidable obstacles to their ambitions and certain potential hazards in the international situation. While they probably believe that the current leaders of the US realize the dangers of nuclear war, and would exercise caution to avoid such a war, they recognize that the US remains firmly committed to resist the expansion of Communist power. Moreover, their stated fear of the influence of "aggressive-minded" leaders in the US may be in some degree real. They probably feel therefore that there is a background of latent danger against which they must calculate, in each instance, the particular risks attending the policy decisions they make. In particular, they will try to weigh the gains which they hope to achieve against the dangers of setting in train a course of events which could lead to general war.

FUTURE TRENDS

152. While factors of physical power almost certainly occupy a central position in their estimate of the world situation, the Soviet leaders are also sensitive to other factors which weigh in the balance of forces between the Sino-Soviet Bloc and the West. They are peculiarly disposed by their Marxist training to view the world as in an historically determined process of change. Consequently, they are likely to give particular weight to what they believe to be the emergent forces which are transforming the present situation. In this perspective of change, the prospects probably appear more favorable to them than the power situation, in its present aspect, would alone lead them to conclude.

153. Soviet expectations for change appear to be fixed particularly upon the quickening impulse toward nationalism in the countries of Africa and Asia. The Soviet leaders appear to believe that domination of this area would, over the longer term, tip the balance of world power in their favor. Over the shorter term, they almost certainly believe that native nationalist and anticolonial movements can be manipulated to damage Western interests, some of which are of critical economic and strategic importance, and to encourage differences among the Western states themselves.

154. The Soviet leaders appear to believe also that there are forces at work within the Western alliance system itself which, if assisted by their own actions, could lead to a decline in its vigor and unity. They have probably recognized that aggressive actions by the Sino-Soviet Bloc tended to increase the willingness of non-Communist nations to follow US leadership. They probably now believe that the more amicable posture displayed by the USSR over the last year, including apparent willingness to negotiate some issues, offers of mutually advantageous trade, and greatly broadened cultural exchanges, have gone far toward dispelling the image of Soviet aggressive intentions which has been the principal motivation for the Western alliance. They may calculate that the steps which they have recently taken to repudiate Stalin will further diminish anti-Communist feelings in the non-Communist world and complicate the efforts of the Western powers to maintain a common front against Soviet policies. They probably regard France as particularly vulnerable, expecting that the absence of an evident Soviet military threat, combined with the revival of German power and the continuing diversion of French resources to colonial problems, will make it increasingly difficult to maintain a parliamentary combination strongly committed to NATO.

155. The Soviet leaders have recently adopted a more realistic appraisal both of the ability of capitalist countries to achieve further industrial growth and of the Soviet need to learn from the West. Nevertheless, they still maintain that long-term trends point to eventual economic crisis in capitalist countries. The view that state intervention in economic activity could avert capitalist deterioration was again repudiated at the 20th Party Congress. Instead it was affirmed that only such artificial stimulants as rearmament and the temporary absence of Germany and Japan from world markets had sustained capitalist economic activity over the last several years, and that with these stimulants becoming exhausted, capitalism's general degeneratory trend would continue.

156. In sum, the Soviet leaders probably estimate that they are entering a period in their relationship with the non-Communist world in which the tide of events is running in their favor. They probably believe that Western power and unity are becoming increasingly vulnerable to Soviet political action, and that many Asian and African governments and peoples will become more and more susceptible to the political and economic allurements which the Bloc can provide. While the Soviet leaders may not expect major defections from the non-Communist world during the course of this estimate, they probably believe that more and more states will move toward some closer degree of cooperation with the Sino-Soviet Bloc. In short, the Soviet leaders probably believe that a more fluid situation is developing in the political alignments of the world, and that additional opportunities for the expansion of Soviet influence will appear.

VIII. PROBABLE SOVIET COURSES OF ACTION

PRESENT SOVIET OBJECTIVES

157. We believe that the developments within the USSR and the Soviet estimate of the world situation which have been discussed in the foregoing sections have led the Soviet leaders to assess their over-all situation somewhat as follows: The balance of military power in the world, including the possession of large nuclear capabilities by both sides, is rapidly becoming such that neither side could emerge from a general war without grave destruction; likewise, neither side is capable of applying sufficient pressure to the other side to force it to make vital concessions. On the other hand, as a result of the more amicable posture assumed by the USSR over the last year, the lines dividing the Communist and non-Communist worlds have tended to blur, many uncommitted states are entering into closer relations with the Bloc, and there are some prospects of division within the Western alliance itself. Finally, the Soviet economy is continuing its rapid growth, and gives promise of sustaining the expanding range of commitments the regime has undertaken.

158. We believe that Soviet policy during the course of this estimate will be conditioned by these considerations. At the same time, we believe that the Soviet leaders remain committed to the view that the struggle between the Communist and non-Communist worlds is irreconcilable and that the relationship between the two can never remain in a balance which is stable and mutually advantageous. Consequently, we believe that the Soviet leaders will push forward during the course of this estimate to achieve the following general objectives:

a. To increase the economic strength and military capabilities of the Sino-Soviet Bloc;

b. To weaken the cohesion of the non-Communist world, and particularly to disrupt NATO;

c. To cause a retraction of Western power and influence, and particularly to force withdrawal of US military power from its present deployment around the periphery of the Bloc;

d. To expand Soviet influence throughout the world by political, economic, and subversive means.

GENERAL ASPECTS OF SOVIET POLICY

War and "Coexistence"

159. As we have indicated above, we believe that the USSR, largely because of the deterrent of nuclear destruction, will attempt to avoid during the period of this estimate courses of action which in its judgment would involve serious risk of general war. The Soviet leaders would almost certainly regard open attacks across recognized state frontiers by Soviet, Communist Chinese, or European Satellite forces as involving such risk. Moreover, for the next few years, the political gains the Communists hope to make by dissociating themselves from aggression and violence would seem to argue against actions which would compromise their general posture.

160. There is a possibility that, as Soviet nuclear capabilities more nearly approach those of the US, the Soviet leaders might come to estimate that the US would no longer be willing to accept the risk of employing nuclear weapons against the USSR except in retaliation to a Soviet nuclear attack. Under these circumstances the USSR might be willing, toward the end of the 1956–1961 period, while refraining from nuclear attack on the US, to undertake major attacks with conventional forces and weapons to overrun key areas on the Eurasian continent. However, we regard this possibility as a remote one.[47]

161. We believe it much more likely that the Soviet leaders intend to maintain for a considerable period the general posture of peaceful coexistence with the non-Communist world

[47] The Assistant Chief of Staff, Intelligence, Department of the Army, considers this possibility to be considerably more likely than is indicated in the text. See his footnote to Paragraph 132.

which they have been developing for some years but with particular effort since the spring of 1955. A principal object of the 20th Party Congress was apparently to validate and affirm this policy, to bolster it with theoretical justifications, and to clear away remaining obstacles to its further development. The modifications of tactical doctrine made at the Congress — favoring cooperation with Socialists and other "progressive" forces, denying the inevitability of war, and acknowledging the possibility of revolution by peaceful and parliamentary means — suggest that the Soviet leaders think of their present policy as designed for a fairly long period. They have internal problems which could be eased during a period of relaxed international tension. Moreover, both the deterrents to a policy of aggression arising from the threat of nuclear war as well as the political opportunities open in many areas to a "coexistence" policy would seem to argue for continuance of the present policy for at least some years.

162. On the other hand, the Soviet leaders appear to believe that the element of threat should not be eliminated from their policy. They evidently consider that fear as well as persuasion can advance their objectives in some areas. Moreover, the Soviet leaders probably believe that a "soft" line contains some dangers to the Communist movement itself. Their warnings against ideological relaxation indicate that they realize that the discipline and spirit of Communist parties may suffer in an atmosphere of reduced tensions. Restiveness in the Soviet population or in the Satellites could develop as a result of the anti-Stalin campaign and might lead the Soviet leaders again to emphasize an alleged external threat as a control device. In sum, while we believe that it is the present intention of the Soviet leaders to maintain an atmosphere of detente for a considerable period, contingencies could arise internally or externally which would lead them to revert to a policy involving greater tensions and risks.

163. It is possible that, at any time during the period of this estimate, armed outbreaks under Communist sponsorship or aggression by local Communist armed forces could occur, especially if the Communists are presented with opportunities which seem to them to involve minimal risk of large-scale conflict. Local aggression might even become probable if the Communists judge the political condition of the non-Communist world to be such that local aggression would promote confusion and divisions rather than stimulate renewed vigilance and determination.

Diplomacy and Propaganda

164. The USSR's current policies call for heavy reliance upon more conventional methods of diplomacy. Attempts to influence governments by establishing an identity of interests between them and the USSR is the hallmark of the present policy. Thus "bourgeois" governments in former colonial areas which were once described as "lackeys of imperialism" now qualify as "progressive" if they reject Western defense support or follow a neutralist foreign policy. The Bloc's trade and credit program provides inducements for them to do so, even though resulting economic gains may in some cases strengthen governments with anti-Communist domestic policies. Similarly, the government of West Germany, once characterized as "fascist," is now conceded respectability and recognition. These tactical shifts indicate that the USSR, in the pursuit of its foreign policy objectives, is now relying upon its ability to influence governments directly, largely through bilateral diplomatic approaches, rather than upon subversive actions against those governments. At the same time Soviet propaganda is supporting these diplomatic tactics by attempting to raise popular pressures for cooperation with the USSR.

165. A number of themes have emerged in Soviet propaganda, diplomacy, and political action which are likely to continue to receive principal emphasis. They are intended to end the political isolation of the Communists which resulted from the USSR's postwar policy, and to lay the groundwork for an increase of Communist political influence in the non-Communist world.

a. *Peace.* Recognizing that the desire to avoid nuclear war constitutes an increasingly

powerful political motivation throughout the world, the USSR will continue the effort to represent itself as the foremost protagonist of peace and to associate the US with war danger. At the same time, it will emphasize its desire for good relations with the US. It will thus seek to give the impression that US–Soviet relations are becoming less tense and to reduce the sense of urgency throughout the world for defensive arrangements directed against the Bloc.

b. *Anticolonialism.* The USSR will continue its effort to ride the wave of nationalist feeling and colonial revolt in Asia, the Middle East, and Africa, and to identify the US with colonialism. The immediate aim is to deny certain critical areas to Western influence and bases, and in some cases to sap the economic and military strength of certain Western powers.

c. *Social and Economic Progress.* The Communists are making a special effort, particularly in underdeveloped countries, to convince Socialists and other political elements interested in social change and economic development that Communist methods insure the most rapid economic growth and the surest road to realization of social justice.

d. *The Popular Front.* The Communists are also trying to convince various non-Communist groups that joint action with Communists on democratic principles is possible. Their immediate aim is to narrow the base of popular support in a number of key countries for pro-Western foreign policies. Ultimately they hope to acquire control of such mass movements by infiltration.

Communist Parties in the Free World

166. The Communist parties in the free world are adapting their tactics to current changes in Soviet foreign policy. The present Soviet leaders are permitting greater flexibility of political maneuver and a larger degree of national autonomy than did Stalin; the Soviet leaders evidently believe that in this new relationship the Communist parties will be a more useful adjunct to Soviet political warfare against the free world. These tactical shifts and in particular the denigration of Stalin have evidently caused some confusion in the Communist parties. We believe, however, that for some time to come they will continue to accept Moscow's leadership and to adapt themselves to the main lines of Soviet foreign policy, with only minor variations. We believe that the present Stalinist generation of Communist Party leaders would be likely to do this on purely ideological grounds, even should Moscow conclude that it no longer needed direct control and could rely merely on the influence it exercises as the fountainhead of Communist doctrine. It is possible that ultimately, though we think not in any short period, new leadership in these parties might conclude that their aspirations to power in their respective countries would be better served if they acquired a genuinely independent national character.

Trade and Economic Aid Policies

167. The USSR will almost certainly continue to emphasize trade and economic assistance programs as means to further its foreign policy goals. During the last year, the USSR has greatly increased efforts to develop economic ties with underdeveloped countries of Asia, Africa, and Latin America, and has also pressed for an expansion of trade with Western Europe. It aims to displace Western influence in underdeveloped countries in order to bring them into closer relationship with the USSR and where possible into economic dependence upon it. More generally, the USSR wishes to portray itself as a respectable and business-like member of the world community as a step toward breaking down trade and other barriers between the Communist and non-Communist worlds. The doctrinal rationalization for broader economic relations with the non-Communist world, the policy statements of the Soviet leaders, and the terms and amounts of credit which have already been offered all indicate that the USSR has undertaken an important shift in foreign economic policy which is intended to continue for a number of years at least.

Disarmament

168. We believe that the USSR considers the disarmament issue to be one of the most im-

portant areas of propaganda and diplomatic maneuver in support of its current policy. It gives the USSR opportunities to document its efforts for "peace" and to probe potential divisions within the free world. Consequently, we believe that the USSR will continue the effort begun in 1955 to give the appearance of a constructive and flexible attitude on this issue.

169. Nevertheless, the USSR will almost certainly continue to reject Western proposals for a comprehensive disarmament scheme involving effective inspection and control. The Soviet leaders are not likely to repose the confidence in Western intentions which would be necessary for them to agree to set up such a system. In any case, they would not wish to deny themselves the option of resort to military action or to abandon the element of threat which is always present in their policy, even in its current phase. Moreover, the Soviet leaders almost certainly regard the kind and scale of inspection procedures required by the Western Powers not only as dangerous to their security, but as conflicting with their desire to maintain a controlled society.

170. What Soviet policy has aimed at is a loosely-drawn pledge of mutual disarmament without significant inspection features. The Soviet leaders have probably had two principal motives. First, they hoped that the effect of such an agreement would be to encourage an atmosphere of relaxation in the West which would tend to undermine NATO policies, cause a rapid degeneration of Western military effort, and create a climate inhibiting the possible use of nuclear weapons by the West. Secondly, they wished to obtain certain important economic advantages for the USSR. A reduction in the size of the Soviet military establishment would assist them to absorb the high cost of current programs for the introduction of new weapons and would make available an important increment of manpower to ease their current labor shortage. A further relaxation of tensions would also enable them more easily to carry costly new weapons programs.

171. The Soviet leaders have evidently now concluded that a disarmament agreement with the Western Powers cannot be obtained because of two Western conditions the USSR could not accept. These were the insistence on comprehensive inspection and control and the idea that, beyond a certain minimum reduction of forces, political settlements, particularly in Germany, must be included. The Soviet leaders have therefore decided to take unilateral measures of reduction which they probably believe will place the Western governments under pressure from their public opinion and parliaments to follow the Soviet example. We believe that the USSR, for the economic and political reasons mentioned in the preceding paragraph, in fact wishes to reduce the pace of armaments competition, but without necessarily impeding its own development of advanced weapons, and is aiming at a political atmosphere conducive to such a result. The Soviet leaders may also hope that, in the longer run, the reduction of armament effort would be carried further in Western countries than in the USSR, and would gradually lead toward a position of Soviet military superiority.

COURSES OF ACTION IN PARTICULAR AREAS

Europe

172. The USSR's recently increased activity in the underdeveloped areas of Asia and the Middle East does not mean that it intends to neglect Europe as a principal area of Soviet political ambitions and diplomatic activity. The failure of the USSR to prevent the ratification of the Paris Agreements in the spring of 1955 brought about a reorientation of Soviet policy in Europe. Recognizing that West German rearmament could no longer be delayed by threats or the pretense of Soviet willingness to negotiate German reunification with the Western Powers, the USSR sought to shelve Four Power negotiations on the German question, and to rely instead upon the effect of its shift to a generally conciliatory posture to obtain both a delay in German rearmament and a weakening of NATO ties and effort.

173. The diplomatic and propaganda campaign against NATO under the slogan of "peaceful coexistence" employs several gam-

bits. A European security pact to supersede both NATO and the Warsaw Pact is one which the USSR is likely to continue to promote. The Soviet leaders will probably prefer for the present to work through bilateral contacts rather than by further great power conferences. The weaker or more remotely placed members of NATO — such as Iceland, Greece, or Turkey — which may have regional or local interests difficult to reconcile within NATO, are likely to be special targets of Soviet propaganda and diplomatic activity. The USSR probably believes that the withdrawal of its cooperation even by a small state would have effects on NATO morale and unity far exceeding the loss of strength involved. Finally, the Soviet leaders hope that the popular front alignments promoted by Communist parties or the USSR's own cultivation of Socialist parties can bring about changes in the policies of key NATO states. France is clearly a principal target in this connection.

174. *Germany.* We believe that no departure from the policy on Germany to which the USSR adhered in the 1955 Geneva meetings, and which amounted to an insistence upon maintaining the present division of the country, is likely during the next several years. The Soviet leaders almost certainly believe that the alignment of a reunited Germany with the West would seriously impair the USSR's military position in Europe, diminish its ability to influence European developments in the future, and complicate the maintenance of Soviet authority in the Eastern European Satellites. For some time to come they are unlikely to consider that any formula for neutralization would provide assurance against a reunified Germany's tacit alliance with the West. Consequently, the Soviet leaders probably believe that they have at present no alternative to the policy they have been following in Germany, which is to consolidate the Communist regime in East Germany while insisting that reunification is now a problem for the two German regimes themselves. In view of the complexities of the German problem, they probably have not clearly formulated the course which they will follow beyond the next year or two. They probably believe that eventually the West Germans can be induced to make independent approaches to Moscow which would greatly complicate the relations of the West German government with its NATO partners.

175. *Yugoslavia.* The restoration of good relations with Yugoslavia has been a principal feature of the USSR's post-Stalin policy in Europe. While the Soviet leaders probably regarded a renewed alignment of the Tito regime with the Bloc as a maximum objective, they probably also considered that a number of lesser purposes justified the sharp and in some respects awkward turn in policy. At a minimum, they aimed to arrest the development of Yugoslav ties with the Western Powers, and to disrupt Yugoslavia's pact with Greece and Turkey, at least insofar as it represented an adjunct to NATO. They probably also hope that Tito's willingness to cooperate with the USSR will encourage neutralist tendencies in uncommitted states of the Middle East and South Asia, and will ease the way to useful contacts with Socialist circles in Western Europe. The Soviet leaders will probably continue their efforts to woo Yugoslavia by a favorable trade and credit policy, by possible sacrifice of other anti-Titoist personalities in the Satellites, and by emphasizing Yugoslavia's independence and equality. However, they would almost certainly regard the granting of an equal measure of independence to the Satellites as too high a price to pay for Yugoslavia's complete realignment with the Bloc.

Asia

176. In Northeast Asia the principal objective of Soviet policy remains to detach Japan from the sphere of US influence, although as long as Japan does not become an important power factor in Asia, the USSR is unlikely to make significant concessions to achieve this objective. In concert with Communist China, the USSR will almost certainly continue efforts to "normalize relations" with Japan as a step toward broader official and unofficial contacts. The USSR will probably not greatly enlarge the limited concessions it has already proffered Japan in current negotiations, since the Soviet leaders are unlikely to have a very high opinion of the present or prospective strength

of Japan's bargaining position. They probably believe that there is potential political instability in Japan on which both Soviet foreign policy and the Japanese Communist Party, especially through its influence in other political organizations, can work gradually but effectively. Most importantly, in the Soviet view, Japan's critical need for markets and for raw materials will in the long run make Communist trade solicitations increasingly more attractive, and create frictions between Japan and the West. Probably the Soviet leaders expect that over a period of several years forces in Japan favoring a more independent and nationalist course in foreign policy and trade will become increasingly influential, and that the effect will be, at a minimum, to move Japan away from close ties with the US.

177. In South and Southeast Asia the USSR will continue the intensified effort launched with the Khrushchev-Bulganin trip to India, Burma, and Afghanistan to extend Soviet influence on the government-to-government level, and to build up popular support for pro-Soviet policies. In these states the USSR has a number of assets which it will try to build upon to encourage increasingly anti-Western policies, and a closer economic orientation toward the Bloc. In many of these states there exist real or imagined grievances against the Western Powers and distrust of their policies, key and influential figures who have been impressed by Communist achievements in economic development, territorial claims which could be supported by the USSR to win favor among popular and official elements, student groups under Communist influence, and economic pressures which the USSR is in a position to alleviate. The propaganda image the USSR will seek to convey will be that of a stable government in possession of irresistibly growing power, abjuring violence and dedicated to the broadening of the "zone of peace" in the interest of human welfare. It is in this area that the USSR will give particular scope to "competitive coexistence" with the West, on the level of trade and economic aid and of political ideas as well. The Soviet leaders apparently regard India as a key target in the area.

178. While we believe that it is the present intention of the USSR to avoid confronting the free world with an armed challenge, potentially critical issues such as the Chinese offshore islands and Indochina could develop in such a way as to bring about such a challenge. On both issues the Communists might hope to justify resort to military action on grounds that would be accepted by considerable elements of world public opinion, and moreover might expect that the US would be deterred from armed intervention by the opposition of its allies and by the fear of alienating some important states of Asia. For the present, however, the USSR apparently intends to curb tensions surrounding both issues, while encouraging by diplomacy and propaganda a gradual erosion of Western resolve to oppose Communist expansion in these areas. We believe that Communist China now shares this view. But there can be no assurance that Peiping would always accept Soviet guidance concerning what it considers its vital interests in Taiwan and the offshore islands, should the USSR counsel restraint. On balance, however, we think Communist China would not undertake major risks without Soviet assent and assurance of support.

Middle East

179. A concurrence of developments over the past year — the conclusion of the Baghdad Pact, rising tensions over the Arab-Israeli issue, and the growing ambitions of Nasser to assert Egyptian hegemony over the Arab world — combined to provide the USSR an opportunity to inject its influence forcefully into the Middle East by offering arms to certain Arab states. The USSR's immediate objective was to prevent an extension and consolidation of the Western military position. This makes disruption of the Baghdad Pact a primary target, and to this end the USSR is encouraging the nationalist impulses against the West already present. Moreover, it is seeking to improve relations with key members of the Baghdad Pact, such as Turkey and Iran, by removing long-standing sources of

irritation on the diplomatic level, encouraging closer official contacts, and expanding trade relations.

180. The USSR is using the Arab-Israeli conflict and the Suez controversy to enhance its influence in the Arab world. We believe, however, that the Soviet leaders recognize that vital Western interests are so deeply involved in the area that the USSR would be courting major political and possibly military risks if it supported the Arabs in violent courses of action affecting either issue. Soviet policy probably aims, therefore, at achieving recognition for the USSR as a major interested power participating equally with the three Western Powers in regulating the affairs of the area. Although the USSR will not want to jeopardize its posture as an advocate of peace it will try to appear as a supporter of Arab nationalism both within and outside the UN.

181. The USSR's ultimate aim is to replace Western influence in the area, and to deprive Western states of the economic advantages they have enjoyed through exclusive arrangements affecting the exploitation and distribution of oil. The Soviet leaders may not envisage the adherence of Middle Eastern states to the Communist sphere in the next few years, but they probably believe that these states can be persuaded to align themselves increasingly with the USSR on international issues. Moreover, they probably believe that the sympathy which the USSR is winning as a result of its current policies will enhance the influence of domestic Communist forces in some Arab states.

Africa

182. The USSR's increased activity in the Middle East has been accompanied by a more active policy in those areas of Africa open to Soviet influence by diplomacy or propaganda. In North Africa, the USSR has refrained from open support of Arab nationalist revolt in order not to compromise its effort to influence developments in France to the detriment of NATO. However, the USSR's presently enhanced influence in Cairo — long the headquarters of emigre nationalist groups from Tunisia, Algeria, and Morocco — may permit it to exploit unrest in French North Africa more effectively by encouraging and supporting the propaganda and subversive activities of these groups. At the same time, the USSR will probably continue to employ direct approaches to native governments, such as Libya and the Sudan, to establish and expand a diplomatic and economic foothold in the area. There are indications that the Soviet leaders intend to devote increasing attention to all of Africa as an area for Soviet penetration and subversion in the future.

Latin America

183. The USSR will almost certainly attempt through broadened economic, diplomatic, and cultural exchanges with Latin American countries to extend its influence into the Western hemisphere and to encourage frictions among the American states. Toward this end the USSR will attempt to exploit existing resentments in Latin America against US import barriers and US competition in world markets, and will present itself as a trading partner willing and able to accept Latin American raw material exports and to act as a source of supply for capital equipment. Bloc trade with Latin America remains at low levels, but it has increased by a substantial percentage in the last year or two, largely due to an expansion of Satellite trading contacts. In addition to the economic and diplomatic offensive, the USSR will almost certainly continue its efforts through local Communist parties and front groups, appealing particularly to labor, students, and intellectuals, to promote anti-US sentiment, to embarrass US business interests, to obstruct economic and military cooperation of Latin American governments with the US, and to encourage the formation of governments amenable to Communist influence.

APPENDIX A

Tables of Military Strength

TABLE 1

ESTIMATED ACTUAL STRENGTH OF BLOC ACTIVE MILITARY PERSONNEL, MID-1958 [1]

	ARMY GROUND FORCES	AIR FORCES	NAVAL FORCES	SUBORDINATION UNKNOWN	SECURITY	TOTALS (Not including Security)
USSR (total)	2,600,000	825,000 [2]	725,000 [3]	up to 150,000 [4]	400,000	4,300,000
EE Satellites (total)	1,085,000	102,600	37,100		326,000	1,224,700
Albania	30,000	300	800		10,000	
Bulgaria	170,000	17,000	5,100		45,000	
Czechoslovakia	170,000	22,000	--		45,000	
East Germany	100,000	7,000	11,000		45,000	
Hungary	150,000	11,500	--		38,000	
Poland	250,000	32,800 [5]	11,000		65,000	
Rumania	215,000	12,000	9,200		78,000	
Communist Asia (total)	3,138,000	98,200	47,300		541,000	3,283,500
Communist China	2,531,000	80,700 [6]	40,300		500,000	
North Korea	350,000	17,500	7,000		--	
Viet Minh	257,000	--	--		41,000 [7]	
Bloc Totals	6,823,000	1,025,800	809,400	up to 150,000	1,267,000	8,808,200

[1] Figures based primarily on order-of-battle, and do not take into account announced Soviet and Satellite reductions. For methodology, see accompanying note. For estimate of mid-1957 Soviet armed forces personnel strength, assuming full implementation of announced reductions, see paragraph 99.

[2] For purposes of this table, an estimated 108,200 naval aviation personnel are included in the total of Soviet air forces personnel.

[3] Does not include MVD naval forces, which for purposes of this table are carried in Soviet Security Forces total.

[4] Air defense control and warning personnel and personnel serving or training to serve surface-to-air and surface-to-surface missiles. The Director of Intelligence, USAF, believes this total includes 51,000 air defense control and warning personnel, 55,000 surface-to-air missile personnel, and 43,000 surface-to-surface missile personnel, all of whom are air forces personnel. The Assistant Chief of Staff, Intelligence, Department of the Army, believes the total should be only about 86,000, including 51,000 air defense control and warning personnel, 35,000 surface-to-air missile personnel, and a small number of surface-to-surface missile personnel, all of whom are ground forces personnel.

[5] Including naval aviation personnel.

[6] Including naval aviation personnel.

[7] Regional troops, organized in 35 regional battalions.

TABLE 1 (continued)

Note on Methodology —

1. Figures on over-all military personnel strengths are based essentially on unit order of battle. To this base, estimative factors are applied for average personnel strength per unit and average number of administrative and supporting personnel per unit or area. Soviet ground units are estimated at about 70 percent of T/O strength; most Soviet air and naval units are estimated at full T/O strength. The resulting over-all personnel strength estimates are subject to a considerable margin of error. In addition, personnel strength estimates based on order of battle can lag considerably behind actual changes in strength, since the basic unit identifications are accumulated over relatively long periods. Of the 190 Soviet line divisions identified since postwar demobilization in mid-1947, 163 have been reidentified since 1 January 1953, by intelligence establishing the existence of division headquarters or one or more subordinate divisional elements, or by observation of the continued presence of ground elements at the locations of previously identified units. The total identified in any one year is much smaller, however, and there can be no certainty that a given division or other unit last identified during 1953 is still operational in 1956.

2. Because of these limitations, we consider that our over-all personnel strength figures represent order-of-magnitude rather than precise measures of actual strength at given dates. Thus, while there is evidence to suggest that increases in the personnel strength of the Soviet armed forces occurred in 1949–1952, and that reductions occurred after 1953, in the absence of quantitative confirmation our strength estimates have not reflected these fluctuations. For this reason, our estimates of Soviet armed forces personnel strength prior to the reductions are more likely to have erred on the low side than on the high side.

3. The principal usefulness of this method of analysis is to provide a basis for judging the approximate present strength of Soviet forces. Except for providing a point of departure and being suggestive of Soviet practice, it does not provide a firm basis for future estimates of over-all strength. Other considerations, such as probable future requirements or changes in Soviet policy based on political and economic factors, must be taken into account in making estimates for the future. At present, we believe it probable that future reductions in over-all Soviet military personnel strength will occur and that the cut might be on the order of 1,200,000 men, in accordance with announced Soviet intentions. Since we are unable at this time to make more than a tentative estimate of the size and composition of Soviet forces following such a reduction, detailed future personnel strength estimates have been omitted from Table 1.

TABLE 2

ESTIMATED STRENGTH OF BLOC GROUND FORCES IN LINE DIVISIONS, MID-1956[1]

Country	Rifle Divisions			Mechanized Divisions			Tank Divisions			Cavalry Divisions			Airborne Divisions			Total Divs.
	No.	T/O	Actual	No.	T/O	Actual	No.	T/O	Actual	No.	T/O	Actual	No.	T/O	Actual	
USSR[2]	95	13,050	9,000	45	15,400	10,000	20	13,660	9,500	5	5,000	3,500	10	9,000	7,000	175[3]
Communist China	119	18,213	15,000				3	7,852	4,500	3	5,938	4,000				125
East Germany	4	11,500	9,000	3	14,000	11,000										7
Poland	12	11,500	9,000	5	14,000	11,000										17
Bulgaria	12	11,500	8,500													12
Czecho-slovakia	8	11,500	8,000	4	14,000	10,000	2	11,500	7,500							14
Hungary	9	11,500	8,000	1	14,000	9,000	1	11,500	8,000							11
Rumania	12[4]	11,500	8,000	1	14,000	8,500	1	11,500	9,000							14
North Korea	18	10,600	9,000													18
Viet Minh	14	11,000	11,000													14
Total	303			59			27			8			10			407[5]

[1] Does not take into account announced Soviet and Satellite reductions. For estimate of possible Soviet divisional structure following reductions, see paragraph 106.

[2] Actual strengths of Soviet divisions vary. The figures shown are based on units at about 70 percent of T/O strength.

[3] Estimated dispositions of Soviet line divisions: Occupied Europe, 28; Northwest USSR, 14; Western USSR, 48; Southwestern USSR, 18; Southern USSR, 27; Central USSR, 10; Soviet Far East, 30.

[4] Including two Mountain Divisions.

[5] Estimated break-down by major groupings: USSR, 175; Communist China, 125; European Satellites, 75; North Korea and Viet Minh, 32.

SECRET

SECRET

TABLE 3

ESTIMATED BLOC TRAINED RESERVES, MID-1956 AND MID-1961, AND GROUND MOBILIZATION CAPACITY, MID-1956

COUNTRY	TRAINED RESERVES			GROUND MOBILIZATION CAPACITY — MID-1956					
				M+30 Days		M+80 Days		M+360 Days	
	Mid-1956	Mid-1958	Mid-1961	Personnel	Div.	Personnel	Div.	Personnel	Div.
USSR	6,900,000	7,700,000	8,900,000	8,400,000	300			17,000,000	500[1]
Satellites	3,325,000	4,035,000	5,060,000	2,905,000	123	4,800,000	195[2]		
Albania	65,000	85,000	110,000	80,000	4	100,000	6		
Bulgaria	575,000	675,000	800,000	500,000	20	700,000	28		
Czecho-slovakia	625,000	725,000	850,000	500,000	25	1,000,000	40		
East Germany	85,000	125,000	300,000	225,000	9	300,000	14		
Hungary	475,000	575,000	700,000	400,000	18	700,000	28		
Poland	825,000	1,000,000	1,250,000	650,000	25	1,100,000	44		
Rumania	675,000	850,000	1,050,000	550,000	22	900,000	35		
Communist China		1,000,000	2,000,000	2,500,000	125			5,000,000	155
North Korea	Negligible			327,000	18	360,000	24		
Viet Minh	Negligible			300,000	16	300,000	20		

[1] It is estimated that 200 divisions will be utilized to provide replacement units or individual replacements for combat losses.

[2] Units in excess of this number could be provided but would lack equipment unless provided by the USSR.

TABLE 4

ESTIMATED ACTUAL AIRCRAFT STRENGTH OF BLOC AIR UNITS
MID-1956 — MID-1961[1]

	MID-56			MID-57	MID-58			MID-59	MID-60	MID-61		
	USSR	EE SAT	CCAF/ NKAF	USSR	USSR	EE SAT	CCAF/ NKAF	USSR	USSR	USSR	EE SAT	CCAF/ NKAF
FIGHTER												
Jet (Day)	8,257	1,600	1,580	7,628	6,953	2,120	1,750	6,020	5,248	4,506	1,880	1,435
Jet (A/W)	1,046	55	30	1,707	2,382	100	200	3,316	4,087	4,829	790	645
Piston	—	50	180	—	—	—	100	—	—	—	—	90
ATTACK												
Jet[2]	416	—	90	567	680	395	290	945	945	945	710	360
Piston	523	866	190	416	265	495	40	—	—	—	—	—
LIGHT BOMBER												
Jet	2,938	165	401	3,168	3,168	385	700	3,168	3,168	3,168	660	780
Piston	—	60	260	—	—	20	—	—	—	—	—	—
MEDIUM BOMBER[3]												
Jet	475	—	—	700	700	—	—	700	700	700	—	20
Piston	769	—	20	380	190	—	40	—	—	—	—	30
HEAVY BOMBER[3]												
Jet	35	—	—	90	220	—	—	400	500	500	—	—
Turbo-prop	30	—	—	130	250	—	—	300	300	300	—	—
TRANSPORT												
Medium	—	—	—	29	98	—	—	141	255	330	—	25
Light	1,681	115	140	1,656	1,586	145	210	1,544	1,428	1,354	165	185
HELICOPTERS												
Large	235	15	—	350	450	85	40	550	600	600	115	80
RECONNAIS-SANCE												
Jet Fighters	77	—	40	115	115	110	50	115	115	115	145	56
Jet Light Bmrs	506	—	—	605	605	60	50	605	605	605	140	56
Piston	162	85	10	172	172	—	10	172	172	172	—	10
UTILITY/Liaison												
Jet	54	—	—	115	115	—	—	115	115	115	—	—
Piston	109	210	40	115	115	130	55	115	115	115	—	60
TANKERS[4]												
TOTALS	17,313	3,221	2,981	17,943	18,064	4,045	3,535	18,206	18,353	18,354	4,605	3,832
BLOC TOTAL		23,515				25,644					26,791	

[1] Tables 4, 5, 6, and 7 do not take into account the possible effect on the air forces of the announced Soviet force reductions.

[2] At present this force consists of fighters only. We estimate that a jet attack type will be introduced.

[3] For a discussion of the factors which may affect the present medium and heavy bomber estimates, especially in the later years, see paragraph 115.

[4] Tankers are not shown in specific numbers since they have not been identified in operational units. For a discussion of Soviet inflight refueling capabilities and probable tanker requirements, see paragraph 117.

TABLE 5

ESTIMATED GEOGRAPHIC DISTRIBUTION OF SOVIET ACTUAL AIRCRAFT STRENGTH BY TYPE
MID-1956

AIRCRAFT TYPE	EASTERN EUROPE [1]	NORTH-WESTERN USSR [2]	WESTERN USSR [3]	W. CENTRAL USSR [4]	CAUCASUS USSR [5]	E. CENTRAL USSR [6]	FAR EAST [7]	TOTAL
FIGHTER								
Jet (Day)	1,020	1,249	1,941	1,010	1,067	418	1,552	8,257
Jet (A/W)	75	184	269	204	131	37	146	1,046
TOTAL	1,095	1,433	2,210	1,214	1,198	455	1,698	9,303
ATTACK								
Jet	114	—	—	—	75	—	227	416
Piston	184	—	113	—	—	113	113	523
TOTAL	298	—	113	—	75	113	340	939
LIGHT BOMBER								
Jet	330	400	1,039	136	245	54	734	2,938
MEDIUM BOMBER								
Jet	—	63	355	42	—	—	15	475
Piston	—	83	328	83	55	—	220	769
TOTAL	—	146	683	125	55	—	235	1,244
HEAVY BOMBER								
Jet	—	8	27	—	—	—	—	35
Turbo-prop	—	—	30	—	—	—	—	30
TOTAL	—	8	57	—	—	—	—	65
TRANSPORT								
Medium	—	—	—	—	—	—	—	—
Light	115	155	438	381	61	58	473	1,681
TOTAL	115	155	438	381	61	58	473	1,681
HELICOPTERS								
Large	5	45	85	60	5	—	35	235
RECONNAIS-SANCE								
Jet Fighter	51	—	26	—	—	—	—	77
Jet Light Bomber	68	74	185	22	45	22	90	506
Piston	—	51	8	—	26	—	77	162
TOTAL	119	125	219	22	71	22	167	745
UTILITY/Ln								
Jet Light Bomber	—	18	18	—	—	—	18	54
Piston (Misc.)	14	8	29	—	—	—	58	109
TOTAL	14	26	47	—	—	—	76	163
	1,976	2,338	4,891	1,938	1,710	702	3,758	17,313

[1] East Germany, Poland, Hungary, and Rumania.
[2] Northern, Leningrad, and White Sea Military Districts.
[3] Baltic, Belorussian, Carpathian, Kiev, Odessa, and Tauric Military Districts.
[4] Moscow, South Ural, Volga, Voronezh, and Ural Military Districts.
[5] North Caucasus and Transcaucasus Military Districts.
[6] East Siberian, Turkestan, and West Siberian Military Districts.
[7] Far East and Transbaikal Military Districts.

TABLE 6

ESTIMATED SOVIET ACTUAL AIRCRAFT STRENGTH BY ROLE WITHIN MAJOR COMPONENTS
MID-1956

TYPE AIRCRAFT	TACTICAL (FRONTAL) AVIATION	FTR. AVIATION OF AIR DEFENSE	LONG-RANGE AVIATION	NAVAL AVIATION	AVIATION OF ABN. TROOPS	TOTALS
FIGHTER						
Day	3,949	2,834	—	1,474	—	8,257
A/W	396	418	—	232	—	1,046
TOTAL	4,345	3,252	—	1,706	—	9,303
ATTACK						
Jet	416	—	—	—	—	416
Piston	447	—	—	76	—	523
TOTAL	863	—	—	76	—	939
LIGHT BOMBER						
Jet	2,285	—	—	653	—	2,938
MEDIUM BOMBER						
Jet	—	—	475	—	—	475
Piston	—	—	756	13	—	769
TOTAL	—	—	1,231	13	—	1,244
HEAVY BOMBER						
Jet	—	—	35	—	—	35
Turbo-prop	—	—	30	—	—	30
TOTAL	—	—	65	—	—	65
TRANSPORT						
Medium	—	—	—	—	—	—
Light	713	94	214	162	498	1,681
TOTAL	713	94	214	162	498	1,681
HELICOPTERS						
Large	50	—	—	85	100	235
RECONNAISSANCE						
Jet Fighter	77	—	—	—	—	77
Jet Light Bomber	396	—	—	110	—	506
Piston	—	—	—	162	—	162
TOTAL	473	—	—	272	—	745
UTILITY/Ln						
Jet	—	—	—	54	—	54
Piston	100	—	—	9	—	109
TOTAL	100	—	—	63	—	163
	8,829	3,346	1,510	3,030	598	17,313

TABLE 7

ESTIMATED SOVIET ACTUAL AIRCRAFT STRENGTHS BY ROLE WITHIN MAJOR COMPONENTS
MID-1961

TYPE AIRCRAFT	TACTICAL (FRONTAL) AVIATION	FTR. AVIATION OF AIR DEFENSE	LONG-RANGE AVIATION	NAVAL AVIATION	AVIATION OF ABN. TROOPS	TOTALS
FIGHTER						
Day	2,158	1,448	—	900	—	4,506
A/W	2,154	1,899	—	776	—	4,829
TOTAL	4,312	3,347	—	1,676	—	9,335
ATTACK						
Jet	869	—	—	76	—	945
Piston	—	—	—	—	—	—
TOTAL	869	—	—	76	—	945
LIGHT BOMBER						
Jet	2,419	—	—	749	—	3,168
MEDIUM BOMBER						
Jet	—	—	700	—	—	700
Piston	—	—	—	—	—	—
TOTAL	—	—	700	—	—	700
HEAVY BOMBER						
Jet	—	—	500	—	—	500
Turbo-prop	—	—	300	—	—	300
TOTAL	—	—	800	—	—	800
TRANSPORT						
Medium Jet	58	17	25	—	—	100
Medium Piston	57	—	—	29	144	230
Light Piston	605	75	185	144	345	1,354
TOTAL	720	92	210	173	489	1,684
HELICOPTERS						
Large	125	—	—	125	350	600
RECONNAISSANCE						
Jet Fighter	115	—	—	—	—	115
Jet Light Bomber	490	—	—	115	—	605
Piston	—	—	—	172	—	172
TOTAL	605	—	—	287	—	892
UTILITY/Ln						
Jet	58	—	—	57	—	115
Piston	86	—	—	29	—	115
TOTAL	144	—	—	86	—	230
	9,194	3,439	1,710	3,172	839	18,354

TABLE 8

ESTIMATED PERFORMANCE OF SOVIET FIGHTER AIRCRAFT

AIRCRAFT	Year Into Operational Use	Maximum Speed			Combat Ceiling	Combat Radius
		Sea Level	35,000 ft.	40,000 ft.	ft.	naut. miles
		DAY FIGHTERS				
FRESCO A & B	Current	620	555	552	53,900	610
FRESCO C	Current	635	570	569	57,900	500
FARMER	Current	695	745	605	61,400	180 [1]
FARMER (Improved)	1957	700	850	800	62,000	400
DF-59	1959	740	1,050	1,000	65,000	400
		ALL-WEATHER FIGHTERS				
FRESCO D	Current	635	570	569	57,700	500
FLASHLIGHT A	Current	615	545	540	50,300	420
FLASHLIGHT C	1957	620	560	555	51,800	465
AWF-59	1959	740	1,050	1,000	65,000	400

[1] Internal fuel only.

TABLE 9

ESTIMATED PERFORMANCE OF SOVIET LONG-RANGE AIRCRAFT
(Calculated in accordance with US Mil-C-5011A Spec)

CONDITIONS	BULL	MODIFIED BULL	BADGER	1957[2] BADGER	BISON	1958[3] BISON	1961[3] BISON	BEAR
Combat Radius/Range (naut. miles)								
a. 25,000 lb. bomb load	—	—	—	—	2200/4300	2500/4700	3000/5600	3500/6600
one refuel[1]	—	—	—	—	3000/5800	3400/6400	4100/7600	4750
b. 10,000 lb. bomb load	1700/3100	2000/3600	1500/2900	1900/3700	2450/4800	2750/5300	3200/6300	3900/7600
one refuel	2300/4200	2700/4900	2050/3900	2550/5000	3300/6500	3700/7200	4300/8500	5300
c. 3,500 lb. bomb load	1950/3500	2300/4100	1700/3400	2100/4200	2550/5000	2800/5600	3300/6500	4100/8200
one refuel	2650/4700	3100/5500	2300/4600	2850/5700	3450/6800	3800/7600	4400/8700	5600
Speed/Alt. (kn./ft.)								
a. Max. speed/	350/	360/	545/	550/	540/	540/	540/	495/
optimum alt.	30,000	30,000	12,500	12,500	19,000	19,000	19,000	21,400
b. Target speed/	310/	340/	475/	470/	475/	475/	475/	435/
alt.	30,000	35,000	41,000	43,000	41,500	44,500	46,200	40,000
Combat Ceiling (ft.)	36,500	37,500	45,000	46,000	43,600	46,500	49,000	40,700

[1] Refueling estimates based on the assumption that the USSR develops and produces compatible tankers which will provide approximately 35 percent increase in radius/range.
[2] Improvements include the replacement of the 18,000 lb. thrust engines with those having a thrust of 20,500 lbs.
[3] Improvements include higher thrust engines and a higher gross weight.

TABLE 9 — continued

ESTIMATED SOVIET LONG-RANGE AIRCRAFT PERFORMANCE UNDER OPTIMUM MISSION PROFILE

(Calculated in accordance with US Mil-C-5011A Spec except that fuel reserves are reduced to permit a maximum of 30 minutes loiter at sea level, and aircraft operate at altitudes permitting maximum radius/range)

CONDITIONS	BULL	MODIFIED BULL	BADGER	1957[4] BADGER	BISON	1956[4] BISON	1961[4] BISON	BEAR	1961[4] MEDIUM BOMBER
Combat Radius/Range (naut. miles)									
a. 25,000 lb. bomb load	—	—	—	—	2500/4800	2800/5300	3200/6100	3800/7200	—
one refuel[1]	—	—	—	—	3400/6500	3800/7200	4300/8200	5100/—	—
b. 10,000 lb. bomb load	1800/3300	2150/4000	1600/3100	2050/4000	2800/5400	3100/6100	3500/6800	4250/8300	1950/4000
one refuel	2400/4500	2900/5400	2200/4200	2750/5400	3800/7300	4200/8200	4700/9100	5750/—	—
c. 3,500 lb. bomb load	2050/3700	2450/4600	1850/3700	2300/4500	2900/5700	3200/6400	3600/7000	4500/8900	2200/4600
one refuel	2750/5000	3350/6200	2500/5000	3100/6100	3900/7700	4300/8600	4900/9400	6100/—	—
Speed/Alt. (kn./ft.)									
a. Max. speed/	350/	360/	545/	550/	540/	540/	540/	495/	1085/
optimum alt.	30,000	30,000	12,500	12,500	19,000	19,000	19,000	21,600	35,000
b. Target speed/	310/	340/	475/	470/	475/	475/	475/	410/	—
alt.	30,000	35,000	41,500	43,500	42,400	45,500	47,000	42,100	—
Combat ceiling (ft.)	36,500	37,500	45,500	46,500	44,600	47,500	50,000	41,300	57,500
Terminal Target Altitude (ft.)[3]									
a. 25,000 lb. bomb load	—	—	—	—	52,600	55,200	56,000	48,200	—
b. 10,000 lb. bomb load	41,500	42,500	49,500	51,500	53,200	56,000	57,500	50,200	61,000
c. 3,500 lb. bomb load	42,000	43,000	51,000	53,000	54,600	57,000	58,500	51,200	62,500

[1] [2] [3] (See footnotes on preceding page.)

[4] It is estimated that in 1961 the USSR will introduce a new medium bomber with supersonic dash capabilities (Mach 1.2–1.5).

[3] Service ceiling at maximum power with one hour fuel reserves plus bomb load aboard. No range figure is associated with this altitude.

TABLE 10

ESTIMATED BLOC NAVAL FORCES, MID-1956, MID-1961[1]

MODERN VESSELS[2]

FLEET	BALTIC				NORTHERN		BLACK SEA				PACIFIC				TOTALS				BLOC TOTAL	
COUNTRY	USSR		Satellites		USSR		USSR		Satellites		USSR		Communist China[4]		USSR		Communist China Satellites &			
Ships	'56	'61	'56	'61	'56	'61	'56	'61	'56	'61	'56	'61	'56	'61	'56	'61	'56	'61	'56	'61
MAJOR SURFACE VESSELS																				
Heavy Cruisers	2	0	0	0	0	0	2	0	0	0	2	2	0	0	6	2	0	0	6	2
Light Cruisers	8	10	0	0	5	9	5	8	0	0	2	7	1	0	20	34	1	0	21	34
Destroyers	51	45	1	0	29	42	28	36	1	1	33	49	4	4	141	172	6	5	147	177
Escort Destroyers	14	16	0	6	11	20	14	31	0	0	26	34	0	0	65	101	0	6	65	107
TOTAL (MAJOR VESSELS)	75	71	1	6	45	71	49	75	1	1	63	92	5	4	232	309	7	11	239	320
MINOR SURFACE VESSELS																				
TOTAL[3]	903	1,000	90	169	198	225	194	215	66	66	386	400	204	204	1,681	1,840	360	439	2,041	2,279
SUBMARINES[5]																				
Long Range[6]	40	150	0	0	85	270	55	103	0	0	22	120	0	0	202	643	0	0	202	643
Long Range	11	0	0	0	13	0	1	0	0	0	7	0	4	0	32	0	4	0	36	0
Medium Range[8]	3	3	0	0	0	0	0	0	0	0	0	0	0	0	22[9]	162[7]	0	0	22	162
Medium Range	9	4	0	0	0	0	0	0	0	0	1	0	0	0	10	4	0	0	10	4
Short Range	31	21	6	6	0	0	14	3	0	0	28	18	4	4	73	42	10	10	83	52
TOTAL (SUBMARINES)	94	178	6	6	98	270	70	106	0	0	58	138	8	4	339	851	14	10	353	861

(See footnotes on following page.)

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TABLE 10 — Continued

ESTIMATED BLOC NAVAL FORCES, MID-1956, MID-1961[1]

OVERAGE VESSELS[2]

FLEET	BALTIC				NORTHERN		BLACK SEA				PACIFIC				TOTALS				BLOC TOTAL	
COUNTRY	USSR		Satellites		USSR		USSR		Satellites		USSR		Communist China[4]		USSR		Satellites & China Communist			
Ships	'56	'61	'56	'61	'56	'61	'56	'61	'56	'61	'56	'61	'56	'61	'56	'61	'56	'61	'56	'61
OVERAGE MAJOR SURFACE VESSELS																				
Battleships/Monitors	2	2	0	0	0	0	2	2	0	0	0	0	0	0	4	4	0	0	4	4
Heavy Cruisers	0	2	0	0	0	0	0	2	0	0	0	0	0	0	0	4	0	0	0	4
Light Cruisers	1	1	0	0	0	0	1	1	0	0	0	0	0	1	2	2	0	1	2	3
Destroyers	1	15	1	2	3	7	2	7	5	4	2	11	0	0	8	40	6	6	14	46
TOTAL (OVERAGE MAJOR VESSELS)	4	20	1	2	3	7	5	12	5	4	2	11	0	1	14	50	6	7	20	57
OVERAGE SUBMARINES																				
Long Range	8	11	0	0	16	17	10	2	0	0	9	3	0	4	43	33	0	4	43	37
Medium Range	3	6	3	1	0	0	8	1	3	2	18	0	4	4	29	7	10	7	39	14
Short Range	11	10	0	0	5	3	10	11	3	3	8	0	1	0	34	24	4	3	38	27
TOTAL (OVERAGE SUBMARINES)	22	27	3	1	21	20	28	14	6	5	35	3	5	8	106	64	14	14	120	78

[1] Does not take into account the possible effect on the naval forces of the announced Soviet force reductions. See paragraph 121.

[2] Modern vessels include surface ships 20 years of age and less (from date of completion), and submarines 14 years of age and less. Overage vessels include surface ships more than 20 years of age, and submarines 15–20 years of age. Submarines are excluded entirely from the estimated future order of battle at 20 years. Surface vessels are not excluded because of age. These are included until it becomes apparent that they are no longer fulfilling type assignments, at which time they are assigned to the Miscellaneous Auxiliary (AG) category.

[3] Construction rates of minor combatant vessels are uncertain and probably will be limited to only slightly more vessels than will be needed to fulfill replacement needs.

[4] There is no reliable information upon which to estimate future augmentation to the Chinese Communist Navy. The Chinese Communists do have a significant shipbuilding capacity and this factor should be considered when analyzing mid-1961 estimates.

[5] For a discussion of the factors which may affect future Soviet submarine strength, see paragraph 124.

[6] Includes 19 unassigned in 1956.

[7] Includes 159 unassigned in 1961.

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TABLE 11

ESTIMATED PRODUCTION OF MAJOR GROUND FORCE WEAPONS
1956–1961

	1956	1957	1958	1959	1960	1961
Medium Tanks	4,000	4,000	2,500 [1]	3,500	4,000	4,000
Heavy Tanks	800	800	800	800	300 [1]	500
Assault Guns						
SU – 85	300	450	450	450	600	600
SU – 122	600	600	800	800	800	800
SU – 152	400	400	200	0	0	0
Amphibious Tanks	150	300	300	0	0	0
Light Tanks	100	250	350	350	300	300
57–mm AA	1,500	1,500	1,000	1,000	1,000	1,000
85–mm AA	0	0	0	0	0	0
100–mm AA	1,000	1,000	500	250	250	250
122–mm AA	150	150	150	100	100	100
57–mm Self-propelled Anti-Tank	1,000	1,000	1,000	1,000	1,000	1,000
85–mm M 1945	2,000	1,000	500	500	500	500
85–mm Self-propelled Anti-Tank	500	750	1,000	1,000	1,000	1,000
100–mm M 1955	2,000	4,000	5,000	5,000	5,000	5,000
122–mm M 1954	500	500	500	500	500	500
122–mm M 1955	200	300	500	500	500	500
122–mm Howitzer [2]	500	200	200	200	200	200
152–mm Howitzer M 1955	100	200	500	500	500	500
152–mm Gun-howitzer [2]	0	0	0	0	0	0
203–mm Howitzer	0	0	0	0	0	0
203–mm Gun-howitzer M 1955	100	150	200	200	100	100
Mortars						
82–mm	2,000	1,000	500	500	500	500
120–mm	2,000	2,000	2,000	2,000	2,000	2,000
160–mm (new)	1,000	1,000	1,000	1,000	1,000	1,000
240–mm	250	300	300	300	300	300

[1] Indicates estimated introduction of a new model.

[2] Probably will be replaced by a new model of approximately same caliber. If so, production will be increased in later portion of period.

TABLE 12

AIRCRAFT PRODUCTION IN SOVIET BLOC AND NATO COUNTRIES
1946–1955

	1946–1951	1952–1955	POST-WAR TOTAL
SOVIET BLOC			
Fighters (Units)	20,371	18,630	39,001
Bombers (Units)	8,432	5,941	14,373
All Others (Units)	28,190	16,261	44,451
Total Aircraft Production Wt. (million pounds)	311	304	615
NATO			
Fighters (Units)	14,746	22,302	37,048
Bombers (Units)	3,431	5,954	9,385
All Others (Units)	85,429	38,928	124,357
Total Aircraft Production Wt. (million pounds)	337	629	966

TABLE 13

AIRCRAFT PRODUCTION IN USSR AND US
1946–1955

	1946–1951		1952–1955		Postwar Total	
	Units	Weight[1]	Units	Weight[1]	Units	Weight[1]
USSR						
Fighters	19,872	83,411	16,776	97,778	36,648	181,189
Bombers	8,432	138,391	5,198	121,721	13,630	260,112
All Others	26,000	84,265	13,553	46,895	39,553	131,160
US						
Fighters	8,116	53,057	15,245	144,435	23,361	197,492
Bombers	2,626	64,497	5,168	145,085	7,794	209,582
All Others	73,464	117,594	31,097	240,012	104,561	357,606

[1] Airframe weight is in thousands of pounds.

TABLE 14

ESTIMATED SOVIET BLOC AIRCRAFT PRODUCTION
1955 THROUGH 1961

	1955	1956	1957	1958	1959	1960	1961
USSR							
Bombers	1,239	1,153	857	1,412	1,278	876	739
Heavy	31	114	292	351	188	167	172
Medium	381	499	180	180	180	177	20
Lt/Attack	827	540	385	881	910	532	547
Fighters	3,800	3,509	4,059	4,447	3,383	3,133	4,327
All Others	3,597	3,425	3,580	3,658	3,658	3,583	3,583
SATELLITES							
Fighters	659	402	450	823	960	960	960
All Others	1,100	1,146	1,295	1,390	1,404	1,416	1,416
TOTAL SOVIET BLOC							
Bombers	1,239	1,153	857	1,412	1,278	876	739
Heavy	31	114	292	351	188	167	172
Medium	381	499	180	180	180	177	20
Lt/Attack	827	540	385	881	910	532	547
Fighters	4,459	3,911	4,509	5,270	4,343	4,093	5,287
All Others	4,697	4,571	4,875	5,048	5,062	4,999	4,999

TABLE 15

ESTIMATED TOTAL USSR NAVAL VESSEL CONSTRUCTION, 1956–1961

Major Surface Vessels	1956	1957	1958	1959	1960	1961
Cruisers	3	3	2	2	2	2
Destroyers	16	16	8	8	8	8
Escort Destroyers	10	10	6	6	6	6
Minor Surface Vessels[1]	20+	20+	20+	20+	20+	20+
Submarines (Long Range)	90	105	75	75	75	75
(Medium Range)	18	26	30	30	30	30

[1] It is unrealistic to estimate exactly the future building rate of minor surface vessels, but it will be adequate to replace existing units as they become obsolete or are transferred to the Satellites or to Communist China. Building activity in the smaller yards is constant and indicates a gradual build-up of minor surface vessels in the Soviet Navy. This gradual build-up is represented in round figures in Table 10.

TABLE 16

ESTIMATED COMPOSITION OF BLOC MERCHANT FLEETS

MID-1956 — MID-1961

(Ocean-going vessels, 1,000 G.R.T. and up)

NORTHERN FLEET

	USSR			SATELLITE			TOTAL		
	Non-Tanker No. GRT	Tanker No. GRT	Total No. GRT	Non-Tanker No. GRT	Tanker No. GRT	Total No. GRT	Non-Tanker No. GRT	Tanker No. GRT	Total No. GRT
Mid-1956	87 233,375	6 7,485	93 240,860	—	—	—	87 233,375	6 7,485	93 240,860
Mid-1957	107 291,436	6 7,485	113 298,921	—	—	—	107 291,436	6 7,485	113 298,921
Mid-1958	117 336,246	6 7,485	123 343,731	—	—	—	117 336,246	6 7,485	123 343,731
Mid-1959	119 343,246	6 7,485	125 350,731	—	—	—	119 343,246	6 7,485	125 350,731
Mid-1960	121 350,246	6 7,485	127 357,731	—	—	—	121 350,246	6 7,485	127 357,731
Mid-1961	123 357,246	6 7,485	129 364,731	—	—	—	123 357,246	6 7,485	129 364,731

BALTIC FLEET

	USSR			SATELLITE[1]			TOTAL		
	Non-Tanker No. GRT	Tanker No. GRT	Total No. GRT	Non-Tanker No. GRT	Tanker No. GRT	Total No. GRT	Non-Tanker No. GRT	Tanker No. GRT	Total No. GRT
Mid-1956	157 479,389	11 16,733	168 496,122	82 318,958	2 12,462	84 331,420	239 798,347	13 29,195	252 827,542
Mid-1957	166 511,235	11 16,733	177 527,968	96 388,515	2 12,462	98 400,977	262 899,750	13 29,195	275 928,945
Mid-1958	170 528,591	11 16,733	181 545,324	106 430,190	2 12,462	108 442,652	276 958,781	13 29,195	289 987,976
Mid-1959	173 538,147	11 16,733	184 554,880	118 482,181	2 12,462	120 494,643	291 1,020,328	13 29,195	304 1,049,523
Mid-1960	176 547,703	11 16,733	187 564,436	129 530,356	2 12,462	131 542,818	305 1,078,059	13 29,195	318 1,107,254
Mid-1961	179 557,259	11 16,733	190 573,992	140 581,007	2 12,462	142 593,469	319 1,138,266	13 29,195	332 1,167,461

[1] Poland, East Germany, Czechoslovakia

TABLE 16 — Continued

BLACK SEA FLEET

	USSR			SATELLITE[1]			TOTAL		
	Non-Tanker No. GRT	Tanker No. GRT	Total No. GRT	Non-Tanker No. GRT	Tanker No. GRT	Total No. GRT	Non-Tanker No. GRT	Tanker No. GRT	Total No. GRT
Mid-1956	111 385,911	43 288,223	154 674,134	17 50,008	—	17 50,008	128 435,919	43 288,223	171 724,142
Mid-1957	116 397,981	47 320,223	163 718,204	19 54,208	—	19 54,208	135 452,189	47 320,223	182 772,412
Mid-1958	119 405,651	53 380,223	172 785,874	21 58,408	—	21 58,408	140 464,059	53 380,223	193 844,282
Mid-1959	122 433,238	59 440,223	181 873,461	23 62,608	—	23 62,608	145 495,846	59 440,223	204 936,069
Mid-1960	124 438,708	65 500,223	189 938,931	25 66,808	—	25 66,808	149 505,516	65 500,223	214 1,005,739
Mid-1961	126 444,178	71 560,223	197 1,004,401	26 68,008	—	26 68,008	152 512,186	71 560,223	223 1,072,409

[1] Bulgaria, Hungary, Rumania

FAR EAST FLEET

	USSR			COMMUNIST CHINA			TOTAL		
	Non-Tanker No. GRT	Tanker No. GRT	Total No. GRT	Non-Tanker No. GRT	Tanker No. GRT	Total No. GRT	Non-Tanker No. GRT	Tanker No. GRT	Total No. GRT
Mid-1956	348 1,180,354	19 63,805	367 1,244,159	108 280,678	10 13,834	118 294,512	456 1,461,032	29 77,639	485 1,538,671
Mid-1957	372 1,256,174	19 63,805	391 1,319,979	118 305,148	13 23,084	131 328,232	490 1,561,322	32 86,889	522 1,648,211
Mid-1958	381 1,283,674	19 63,805	400 1,347,479	125 325,980	14 25,934	139 351,914	506 1,609,654	33 89,739	539 1,699,393
Mid-1959	386 1,289,674	19 63,805	405 1,353,479	128 332,480	15 28,784	143 361,264	514 1,622,154	34 92,589	548 1,714,743
Mid-1960	391 1,295,674	19 63,805	410 1,359,479	131 338,980	16 31,634	147 370,614	522 1,634,654	35 95,439	557 1,730,093
Mid-1961	396 1,301,674	19 63,805	415 1,365,479	134 345,480	17 34,484	151 379,964	530 1,647,154	36 98,289	566 1,745,443

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APPENDIX B

ESTIMATED SOVIET TOTAL DEFENSE EXPENDITURES, 1950–1961

1. The estimates of Soviet total defense expenditures contained in Paragraph 37 are based on a study conducted by the IAC Ad Hoc Military Cost Study Committee.[1] [2] This study has been undertaken for three major purposes. The first is to measure over time the economic burden placed on the USSR by its defense establishment through calculation of a ruble total which can be compared with gross national product. The second is to examine these expenditures in detail in order to permit closer analysis of the composition and trends within this total. The third is to measure the dollar value of Soviet defense expenditures in order to obtain some comparison, albeit a crude one, of the value of defense expenditures in the USSR and the US.

2. The estimates presented here include all known Soviet defense expenditures, irrespective of whether these expenditures are made from the announced military budget or from other sources. For purposes of this study, total expenditures have been categorized as follows:

a. Major programs, consisting of tanks, artillery, weapons, ammunition, construction and refitting of naval vessels, mines, torpedoes, military aircraft, aerial bombs, ground radar, guided missiles, atomic energy, military research and development, communication facilities and equipment, and associated initial and operating spare parts;

b. Support, consisting of a variety of maintenance, operating and training expenses, such as for POL, purchased transportation, construction for the maintenance and replacement of facilities (including barracks), a variety of heterogeneous equipment, civilian pay, medical supplies, printing and publishing, retirement pay, personnel costs for certain KGB personnel, and the support of DOSAAF (paramilitary activities); and

c. Military personnel, consisting of the pay and allowances, food, clothing and miscellaneous personnel supplies for the active uniformed personnel of the Ministry of Defense, the militarized components of the MVD, and the reserve program.

3. Because the analysis was conducted in far greater detail than previous work in this field and took into account many factors not previously examined, we believe that the results are considerably better grounded than our earlier estimates. Nevertheless, they remain tentative and subject to error. While a pre-

[1] The Assistant Chief of Staff, Intelligence, Department of the Army, does not consider the costs derived in the interagency study to be a valid appraisal of the over-all costs of the Soviet military effort and does not concur in the findings of the study. He believes that its basic weakness is a lack of sufficient information, pointing out that few current prices are available for items procured by the Soviet armed forces and arguing that the derivation of prices by the indirect methods employed is too inaccurate. He further believes that the evidence as to whether the armed forces do or do not pay the turn-over tax is not conclusive. Lastly, he regards the information available on costs of such important programs as guided missiles, atomic energy, and research and development as almost nil.

[2] The Director of Naval Intelligence believes that although the text states: (a) the results of this analysis are tentative and subject to error, (b) important gaps remain in statistical data available, particularly in the military sector, and (c) the comparison of the value of defense expenditures in the USSR and the US may be a crude one, the discussion as a whole gives an impression of reliability which is more favorable than the methods and information used can justify. Because of the tenuous nature of much of the evidence used and other important deficiencies in intelligence, he believes that conclusions drawn from this study may not be valid, and that comparisons between USSR and US defense expenditures should be used with caution.

cise margin of error cannot be determined, it is unlikely that it exceeds 25 percent in either direction for total expenditures or the major subtotals. Furthermore, several compensating tendencies serve to reduce the margin of error associated with total expenditures, perhaps to as low as plus or minus 10 percent.

4. The ruble totals are the sums of individual estimates of the value of as complete a list of defense goods and services as possible. These individual estimates are in turn, with some exceptions, the result of applying ruble prices obtained directly or derived in a number of ways to physical estimates of goods and services devoted to defense purposes. The reliability of the results is therefore affected by the reliability both of the estimates of the physical quantities and the prices applied to them. On the first count, there is some evidence to suggest that physical estimates of end-item procurement have tended to be high but that military manpower may have been understated in recent years (see Paragraph 96 of estimate). On the second count, the four basic valuation procedures employed, listed in descending order of reliability, are as follows:

a. Application of ruble prices obtained directly from Soviet sources. The major items valued in this fashion are personnel pay, subsistence, and clothing; automotive equipment and tractors; petroleum products; transportation; construction; some miscellaneous supplies and services; civilian wages; pensions; reserves; MVD-KGB personnel costs; and some research and development.

b. Use of a small sample of ruble prices to obtain ruble/dollar ratios which were then used to convert dollar prices of other items back into rubles. For example, if comparable medium tanks cost 225,000 rubles in the USSR and 50,000 dollars in the US, the resulting 4.5/1 ruble/dollar ratio was applied to the US heavy tank price of 105,000 dollars to obtain a value of 472,500 rubles for the comparable Soviet heavy tank. This procedure was used in the valuation of aircraft, shipbuilding, and armored vehicles.

c. The third procedure is actually a subcategory of the second but is distinguished here because the smaller price samples available probably result in lower reliability. Items in this category are communications equipment and installations, ammunition, electronics, and certain weapons (principally towed artillery, small arms, and mortars).

d. In those cases in which physical estimates were not available or for which prices could not be obtained, values were estimated by the use of partial Soviet data and modified US values or factors, which were converted to rubles by estimated ruble/dollar ratios. This procedure was used to value atomic energy, guided missiles, some research and development, some equipment spares, and other miscellaneous items.

5. Table I shows the share of estimated total defense expenditures accounted for by each of these four types of valuation procedures in 1950, 1955, and 1961. It will be evident that, apart from the effect of possible errors in physical estimates, which become more likely for future years, the reliability of the final result also declines over the period because items which must be valued by less reliable procedures acquire increasing importance in total expenditures.

TABLE I

Share of Estimated Total Defense Expenditures Obtained by Various Valuation Procedures

	1950	1955	1961
Type 1	60	48	41
Type 2	22	27	31
Type 3	7	8	6
Type 4	11	17	22
Total	100	100	100

6. In order to permit comparison with gross national product, total defense expenditures originally calculated in 1951 rubles (see Table II) have to be expressed in terms of 1953 rubles at factor cost[3] and adjusted slightly

[3] The valuation basis for the original derivation of the various series was 1951 market prices. These series were then converted to 1953 factor costs by two adjustments. The first of these, to obtain 1953 market prices, was accomplished by applying the following indexes (1951 = 100):

(a) For military pay, MVD-KGB pay, and pensions — none.

(Footnote continued on page 77)

over time to account for the changes in relative prices which are considered in the calculation of GNP growth. The results of this computation are 110 billion rubles in 1950, 151 billion in 1955, and 204 billion in 1961, indicating that defense expenditures absorbed about 14 percent of GNP in 1950 and the same share in 1955 and will take about 13 percent in 1961.

7. In Table II, total defense expenditures in 1951 rubles are broken down into categories which show the cost of various types of military activities and variations in the relative importance of these activities over time.

8. The series reflects an over-all 37 percent increase between 1955 and 1961 with a sharply rising trend for the years 1955 through 1958, when the total cost reaches 204 billion 1951 rubles. Beginning with 1958 the series remains relatively constant at about 200 billion rubles for two years until 1960, when another sharp rise begins, reaching about 230 billion rubles in 1961.

9. Over the period, procurement (including spare parts) for major programs increases more rapidly than the total. In 1955 this category accounts for 90 billion rubles, or 54 percent of the total. By 1961 this same category increases to 143 billion rubles, or 62 percent of total defense expenditure. Among the major programs, ground equipment expenditures display relative constancy through the period 1955–1961, reflecting the continuing modernization of forces which have already attained considerable size. The fairly level trend for the naval program is due primarily to growing expenditures on submarines counterbalanced by declining expenditures on surface vessels. During the same period the air equipment and the "other" category (which includes guided missiles, atomic energy, and research and development) show significant increases, 101 percent and 81 percent respectively. Support expenditures increase 26 percent during the period, from 23 billion rubles in 1955 to 29 billion rubles in 1961, and account for a relatively constant share of 13 percent of total defense expenditures. Personnel expenditures show only a modest eight percent increase and therefore decline as a share of total expenditures from 32 percent in 1955 to 25 percent in 1961.

10. As was mentioned in Paragraph 3 above, the strength estimates which were used as the basis for personnel costs in Table II for the years 1951–1954 were probably too low. Furthermore, at least some portion of the announced Soviet personnel cut of 640,000 men probably took place during 1955. It also appears that military end-item procurement may have been overestimated for the 1954–1956 period.

11. In addition, the calculations in Table II are incomplete in two other respects, the effects of the reduction in military manpower discussed in Paragraphs 97–100 and the estimated costs of the guided missile program. At minimum, the announced reduction of 1.2 million men, if carried out, would lead to a reduction in direct personnel costs (pay, food, clothing, etc.). Depending on whether the cut were made on a slice or largely on a cadre basis, the result would be an ultimate reduction in annual expenditures of from 11.5 to 9.5 billion 1951 rubles. To this should probably be added a reduction in operating costs and probably some decrease in procurement. However, in the absence of information concerning the details of the reduction, these amounts cannot be estimated with any precision. Again depending on various assumptions as to how the cut would be made, the reduction in annual expenditures for other than for personnel might range between 5.5

(Footnote continued from page 76)

(b) For food — a retail food price index of 78.
(c) For clothing — a retail price index of 95.
(d) For reserve pay — a money wage index of 106.
(e) For all other categories (including military hard goods) — an investment cost index of 95.

The second adjustment, 1953 market prices into 1953 factor costs, was made by reducing the pertinent categories — food, clothing, and POL — by 18 percent. The values of these categories are first reduced by 50 percent to remove the turnover tax. The result is then increased by two-thirds to account for imputed factor returns. Since wholesale prices were used for these goods in this study, the appropriate deduction is slightly larger.

TABLE II

COMPOSITION OF ESTIMATED TOTAL DEFENSE EXPENDITURES[a]
1950–1961

(Billion 1951 Rubles)

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961
MAJOR PROGRAMS	53.5	61.1	63.2	67.2	75.2	90.2	100.8	111.1	119.7	122.2	134.9	142.6
Ground	12.7	13.4	14.9	15.3	15.3	15.2	15.2	14.6	14.7	14.9	14.8	15.0
Naval	10.9	10.5	9.0	10.6	13.4	15.4	15.9	17.2	13.8	14.0	14.2	14.5
Air	14.5	19.9	19.0	18.8	20.2	26.1	30.0	39.6	45.1	40.0	47.0	52.4
Other	15.4	17.3	20.3	22.5	26.3	33.5	39.7	39.7	46.1	53.3	58.9	60.7
SUPPORT	18.6	19.5	20.6	21.8	22.5	23.0	24.6	25.9	26.8	27.8	28.3	29.0
MILITARY PERSONNEL	50.2	51.5	52.2	52.5	53.8	54.2	55.9	56.6	57.2	57.6	58.1	58.3
Pay	25.1	25.9	26.3	26.4	27.2	27.4	28.6	29.1	29.5	29.8	30.0	30.1
Other	25.1	25.6	25.9	26.1	26.6	26.8	27.3	27.5	27.7	27.8	28.1	28.2
TOTAL[b]	122.3	132.1	136.0	141.5	151.5	167.4	181.3	193.6	203.7	207.6	221.3	229.9

[a] See Paragraph 2 above for definitions of categories.

[b] The calculations made in the basic study and presented in this table were obtained in terms of 1951 prices. Since comparison with gross national product required conversion to 1953 factor costs, the total in this table differs from the total expenditures given in connection with GNP in Paragraph 6 above.

and 8.5 billion 1951 rubles for a total range of from 15 to 20 billion 1951 rubles.[4]

12. Recent unofficial Soviet statements have associated a 15 percent cut in budgeted military expenditures with the recent announcement of manpower reductions. This amount, 15.3 billion *1956* rubles, falls roughly in the center of the range given above, which is from 13 to 17 billion rubles when converted from 1951 to 1956 rubles.

13. We believe that something like 17 billion 1951 rubles is a better estimate of the ultimate annual savings from the reductions consequent upon a manpower cut of 1.2 million than the smaller amount based on personnel costs alone. If, then, these reductions are carried out on schedule, the projection in Table II should be lowered by this amount annually in 1958–1961 and by smaller amounts in 1956 and 1957.

14. On the other hand, an increase in the estimated costs of the guided missiles program is likely in the near future. The present estimates are taken from NIE 11-6-54 (5 October 1954) and NIE 11-5-55 (12 July 1955) and run from 2.0 billion 1951 rubles in 1954 and 4.3 billion in 1955, to 13.0 billion in 1960, and 9.0 billion in 1961. New estimates, however, are currently being developed for NIE 11-5-56, and preliminary results suggest that substantial upward revisions may occur.

15. The combined result of these two factors cannot be predicted, but it is clear that they will offset each other to some extent. For this reason, we do not feel that the error in estimated total expenditures which results from the omission of these two factors vitiates the usefulness of the result. Introduction of these factors into Table II would, of course, significantly alter the pattern of costs shown there, particularly as between major programs and military personnel.

16. For purposes of comparison with the US, estimated Soviet defense expenditures have been converted to dollars and presented in Table III in order to indicate the costs which the US would incur in reproducing the Soviet defense effort. The results show that the dollar value of total Soviet expenditures was 93 percent above US defense expenditures in 1950, that US rearmament closed this gap and put US expenditures 35 percent above the Soviet estimate in 1952, that the continued growth of Soviet expenditures and a decline in US expenditures produced virtual equality in 1955, and that the dollar value of estimated Soviet expenditures will rise to $48 billion in 1961.

TABLE III

Dollar Value of US and Estimated USSR Defense Expenditures, 1950–1961

Billion 1955 Dollars

Year	US	USSR
1950	15	29
1951	22	31
1952	42	31
1953	48	33
1954	44	35
1955	38	37
1956	36	40
1957	38	41
1958		43
1959		44
1960		46
1961		48

17. In Table IV, Soviet and US defense expenditures in 1955 for major programs, support, and military personnel are compared in dollar terms. Expenditures for major programs, consisting mainly of hard goods procurement, are virtually equal, although procurement has a considerably different product composition in the two countries. The lower Soviet value for support reflects primarily the lower civilian wage bill resulting from estimates of less extensive maintenance and operating practices in the USSR as well as the extra costs incurred by the US by virtue of its overseas bases. Since Soviet military manpower exceeded US manpower in 1955, application of US costs per man in both countries results in a higher dollar value for Soviet military personnel costs.

[4] The range in the footnote to Paragraph 37, 13–18 billion rubles, expresses these same amounts in 1953 factor costs in order to achieve comparability with the GNP calculations.

TABLE IV

Dollar Value of
US and Estimated USSR Defense Expenditures
in 1955 *

	Billion 1955 Dollars	
	US	USSR
Major Programs	17.4	16.4
Support	9.7	4.4
Military Personnel	10.7	16.6
Total	37.8	37.4

*See Paragraph 2 above for definitions of categories. US data have been arranged in as comparable a fashion as possible.