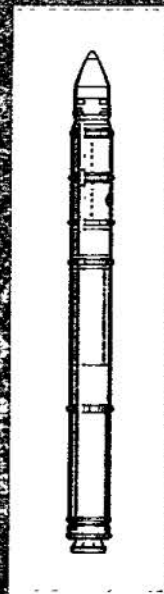


PART II

SOVIET STRATEGIC
FORCE DEVELOPMENT

1960-72



Part II: Soviet Strategic Force Development, 1960-72

Soviet military policy is in part a product of Kremlin politics . . . nothing of consequence can be decided until it has been collectively scrutinized and weighed against the individual interests of the political leaders.

NIE 11-4-68

Soviet Force Requirements

For most of the 1960s the intelligence community struggled to find criteria that it could use to measure and understand the growth of the Soviet ICBM force. In general, analysts were inclined to believe that the Soviets were seeking across-the-board supremacy in strategic forces, but the Board of National Estimates, supported by CIA's Office of Research and Reports, did not believe that the Soviets could realistically hope to achieve a decisive superiority over the United States.

A key element in projecting Soviet force requirements was the personality of the mercurial Nikita Khrushchev. In reforming and modernizing the Soviet armed forces, he had sought to improve their effectiveness while bringing about needed (and, in the end, illusory and futile) internal economic reform. Arguing that nuclear weapons would be decisive in future wars, Khrushchev had worked to build up Soviet strategic forces while cutting back on conventional land forces. Soviet defense spending thus remained relatively stable, but at the cost of growing opposition from within the Soviet military.¹ The "collective leadership" that overthrew Khrushchev in 1964 (soon to be dominated by the Communist Party General Secretary, Leonid Brezhnev) put an end to this policy of restraint, or tried to. Expansion of Soviet strategic forces now would be matched by renewed emphasis on conventional theater and ground forces.² In the end this policy would destroy the Soviet economy and contribute to the destruction of the nation itself, but the immediate result was an alarming growth in Soviet military capabilities across the board.

NIE estimates of projected Soviet force levels (force projections) in the 1960s failed to recognize the sacrifices that the Soviet leadership was willing to make to match or exceed US guided missile deployments. The result

¹ NIE 11-4-65 *Main Trends in Soviet Military Policy*, 14 April 1965; pp. 4, 7-8.

² NIE 11-4-68 *Main Issues in Soviet Military Policy*, 19 September 1968; pp. 3-8.

was that, although near-term projections were more accurate than those for several years into the future, there was a general tendency to underestimate Soviet force levels. In fact, Soviet ICBM launcher deployments were underestimated by about the same amount that they had been overestimated in the previous decade. Such was the progress (if that is the word) of the arms race, however, that a far smaller percentage of the Soviet ICBM force was involved.

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APPROVED FOR RELEASE
CIA HISTORICAL-REVIEW PROGRAM

MAIN TRENDS IN SOVIET CAPABILITIES AND POLICIES, 1960-1965

THE PROBLEM

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

SUMMARY OF THE ESTIMATE

1. The attempt to forecast developments within the USSR and in Soviet power and policy for five years ahead is subject to some very severe limitations. Our estimative reach in many of the detailed matters discussed in the body of this Estimate is frankly acknowledged to fall well short of such a period. In respect of matters where we have actually made five-year estimates the degree of certainty falls off markedly for the later years. In the summary paragraphs which follow we are dealing with the broader trends which will determine the nature and magnitude of the challenge which the USSR will present to US security in the years ahead. These we believe are predictable in the main, although their particular manifestations clearly depend upon unknown and imponderable factors, or even upon purely fortuitous developments.

THE PRESENT SOVIET OUTLOOK

2. One of the principal factors which will shape future developments is the outlook of the Soviet leaders themselves. There are two essential aspects of this. One is the Soviet leaders' belief, derived from the Marxist-Leninist ideology which continues to dominate their thinking, that their society and the non-Communist world are locked in an irreconcilable struggle which must continue until their system comes to dominate the world. There is no evidence at present to indicate that the Soviets will come to accept a

world system which assumes the genuine co-existence of states and ideologies. For so brief a period as five years, Soviet behavior and policy will surely be marked by fundamental hostility toward the West, and especially toward the US as the principal obstacle to the fulfillment of Soviet aims.

3. A second essential feature of the Soviet outlook in the current period is its high confidence in the growth of the USSR's power and influence. Looking back to the weak and perilous position in which the new Communist regime found itself in 1917, remembering all the internal and external trials it has survived, and considering its growth in relative economic and military power over the last 20 years, the Soviet leaders are encouraged in their doctrinaire expectations about communism's inevitable triumph. That it was a Communist rocket which first ventured into space symbolizes for them that they are marching in the vanguard of history. They think they see a response to their doctrines and influence in the revolutionary turmoils of Asia, Africa, and Latin America. They expect to associate the peoples emerging from colonialism and backwardness with their own cause, mobilizing them against an ever more constricted world position of the Western states. The relative internal stability of the latter at present they see as only a transient phase.

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4. While hostility toward the West and confidence in the eventual outcome of the world struggle will inspire Soviet behavior in the period ahead, we do not believe that the result will be policies of recklessness. The Soviet leaders recognize that Western resources remain great, and that the struggle for Communist power in the uncommitted world will be prolonged. They are particularly conscious of the hazards of nuclear war. Moreover, they have numerous problems of their own within the Communist Bloc which may move them to caution. Their policies will be marked by a persistent activism and opportunism, but also by what they consider to be a due measure of caution. More important, however, than the Soviet outlook and aims, especially since these offer little hope for accommodation and genuine peace, are the strengths and resources which the Soviets will be able to bring to the pursuit of their aims.

THE SOVIET POWER BASE

Economic Aspect

5. Perhaps the most firmly based of our estimates are those which relate to the growth of Soviet economic power. The Soviet economy has the resources and plant as well as the planning and directing mechanisms to insure steady fulfillment of most of the goals in industrial expansion which the leadership sets. The industrial targets of the Seven-Year Plan (1959-1965), providing for 8.6 percent annual increase in industrial output, will almost certainly be met ahead of schedule. We estimate that by 1965 total investment will reach about one-third of gross national product (GNP), as compared with the present US rate of about one-fifth of GNP. Only in agriculture, which is burdened by a heritage of errors and neglect, will the regime fall well short of its goals, but even here we estimate that output will increase by about 3 to 4 percent per year. The GNP of the USSR in 1959 was somewhat less than half that of the US; it is growing about twice as fast and by 1965 will probably be somewhat more than half of US GNP.

6. GNP is a rough measurement, however. More important in terms of world power competition are the uses to which economic resources are put. The USSR maintains a defense effort judged to be of about the same magnitude as that of the US. The dollar value of Soviet investment in industry in 1959 exceeded the highest US figure, achieved in 1957. For purposes related to national power—defense, science, foreign economic and political operations—the Soviets are increasingly in a position to assign resources freely and without agonizing self-denials. That they are able to provide the resources for national power on a scale equivalent to the US is due to the virtually absolute command which the leadership has over the disposal of resources. It will continue to give the highest priority to purposes related to national power in order to "overtake and surpass" the US. The Soviet regime has bought economic growth and military strength at the expense of the living standards of the Soviet people. But its resources are now great enough so that it feels able to provide for improved living standards also. The consumption level remains low but we estimate that per capita increases will occur over the next five years at the respectable rate of four percent annually. The Soviet challenge in the economic field will be increasingly formidable, not because the USSR has any chance of overtaking the US standard or style of living, but because Soviet resources for the competition in power are already great and will continue to grow rapidly.

Military Aspect

7. As indicated, military power has one of the first claims upon Soviet resources. Our estimates on the development of Soviet military power until 1965 are far less certain than those on the Soviet economy. This is partly due to unpredictable developments during a period of rapid change in military technology. It is due more to gaps in certain kinds of critical information about Soviet military programs. Although in recent years the Soviets have released fuller economic data than previously,

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on essential matters in the military field they continue to maintain a policy of extreme secrecy, which they evidently view as a major military asset in itself.

8. The most significant development in the military field during the period of this estimate will be the USSR's emergence from strategic inequality, primarily through the build-up of an ICBM force, and also through development of its defense systems against nuclear attack. The overcoming of an inferiority under which the Soviets have operated throughout the postwar period is already having a profound effect on Soviet attitudes and policy. It inspires the confidence remarked upon above, has emboldened the Soviets to challenge the West on a vital issue like Berlin, and has led them to engage the West in other areas around the world formerly conceded to be beyond the reach of Soviet power.

9. The Soviet leaders will not be content with the gains in military power they have made. They will seek, by intensive research and development through the years ahead, as well as by equipping their forces with advanced weapons as these become available, to acquire an advantage over the West. If they succeed, they will press their advantage ruthlessly, though still within what they would consider to be the limits of tolerable risk to their own rule and system. It seems quite clear that in their present view both sides are deterred from the deliberate initiation of general war as a rational course of action. Moreover, with the weapons systems now on hand or likely to be available during the next few years, the Soviets probably do not count on acquiring an advantage so decisive as to permit them to launch general war under conditions which would not gravely menace their regime. Nevertheless, they are building their nuclear striking power with vigor, and we believe that they will build a substantial missile force. What we can learn of Soviet ideas suggests that their long-range striking capability is thought of primarily in terms of deterrence, and of employment for a heavy blow should the Soviets finally conclude that deterrence had failed, rather than in terms of the

deliberate initiation of general war.¹ The Soviet missile force will also constitute an important means of political pressure, even though it is never used in actual combat.

10. In order to deal more effectively with the continuing bomber threat the Soviets are incorporating a large number of surface-to-air missiles into their air defense. They are now also doing large-scale research and development on antimissile systems in the hope of obtaining an advantage in this critical aspect of the future weapons balance. By the period 1963-1966 they will probably begin to deploy such a system, though its effectiveness is uncertain. Soviet research and development effort will probably also focus on the new threat presented by Polaris.

11. Partly as a result of the increased security the Soviets feel they have gained from their development of a variety of offensive and defensive missiles, they have announced a major personnel reduction in their forces, from about 3.6 to about 2.5 million men by the end of 1961. Barring a serious deterioration in the international situation, we believe the cut will be substantially carried out. We believe that tactical aviation has already been cut by one-half and naval aviation by two-thirds, the latter primarily through elimination of the fighter arm. However, the main weight of the cut will fall on the very large ground forces. Even with the reduction, the Soviets will still have substantial field ground forces: we estimate nearly 1.5 million men organized in 65 divisions averaging two-thirds strength and some 60 cadre divisions at about one-fourth strength. The submarine force will become even more than it is today the primary component of the Soviet Navy, and will include

¹ The Assistant Chief of Staff, Intelligence, USAF, believes that the evidence of offensive missile and bomber production and deployment shows a definite intent by the Soviet rulers to achieve a clear military superiority at the earliest practicable date. He feels we are entering a very critical twenty-four month period in which the USSR may well sense it has the advantage. The Soviet leaders may press that advantage and offer the US the choice of war or of backing down on an issue heretofore considered vital to our national interests.

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nuclear and missile-carrying types suitable for strategic attack.

12. In sum, the USSR will continue to develop formidable military strength despite the personnel reduction. The Soviet military posture is designed primarily, we believe, to deter general war but also to fight such a war if necessary.² Equally, it is intended to bolster the USSR's power position and thereby to promote its general policies. Soviet capabilities for limited war in areas close to Bloc borders are obviously great, but for conflict in more distant areas they are comparatively slight. We do not believe that the USSR intends as a matter of policy to conduct limited war at remote ranges. However, we do not exclude that, with their current tendency to political involvement in remoter areas, the Soviets may seek to develop a greater capacity for intervening militarily, even if only to establish a military presence, in such areas. A really effective ability to do this would presumably depend heavily upon acquisition of base rights and facilities under friendly political arrangements.

Scientific Aspect

13. The Soviets obviously understand that science has become one of the key fronts in the world struggle, not only because of its relations to military capability but also because it is a major element in great power prestige. The scale of their effort, thanks to the heavy investment they made in training scientists in past years, is probably now roughly on a par with that of the US, at least in some fields of the basic sciences and in critical areas related to weapons technology. Presumably the scope of Soviet scientific activity will broaden as needs in these first priority areas are met. The quality of Soviet scientific work in many fields is now such that achievements conferring great prestige are as likely to occur in the USSR as in any other country.

²The Assistant Chief of Staff, Intelligence, USAF, believes the Soviets seek a clear military superiority. See his footnote to paragraph 9.

Political Aspects

14. It is in estimating the political aspect of future developments within the Soviet Bloc that the greatest imponderables intrude. The political system within the USSR itself is stable, and it will almost certainly retain its totalitarian features. The regime will not be openly challenged by the Soviet people, who, even though many of them view it with apathy and ideological disillusionment, are in general hopeful for improvement in the conditions of their life and patriotically moved by the USSR's achievements and its position of world power. If there is change in the Soviet political system it will come from the higher levels of the party and government. In the relatively small group which constitutes the real governing class there are some signs of a desire for more regular participation in policy making, and for more reliance in policy execution on professional expertise instead of party agitational methods. While Khrushchev has avoided or been obliged to avoid the arbitrariness of Stalin, among those who surround him there are probably some who would like to move still further away from the domination of one man in the system. Given Khrushchev's age and state of health he may not survive as the dominating leader throughout the next five years. His successor at the head of the Soviet Government and party may be more restricted in the personal power he wields, but in any totalitarian system political developments are likely to depend heavily on the qualities and style which individual personalities bring to the exercise of great and arbitrary power.

15. In the area of political developments within the Communist Bloc it is the evolution of relations among the Bloc states which raises the greatest uncertainties at present. In general, the states of Eastern Europe have gained in economic strength and political stability in recent years, despite the continuing alienation and resentment of large parts of their populations. There seems little doubt that, with the more flexible and indirect methods of control the USSR has been employing since 1956-1957, it will be able to maintain a generally effective hegemony. However,

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China has raised a fundamental challenge to Soviet leadership of the Bloc. Even if some way is found to resolve the issues posed by China's desire to pursue a more militant policy toward the West, it raises the serious question as to whether the long-term unity of the Bloc under Soviet leadership can be maintained. We believe that there is a trend away from monolithic unity, and that in the long run, if China is to remain within the Bloc, a looser relationship is bound to develop. The future course of Sino-Soviet relations will obviously have profound consequences for the nature of the challenge which communism poses for the Free World. The West may be faced either with new dangers or new opportunities, or both.³

SOVIET POLICIES TOWARD THE NON-COMMUNIST WORLD

16. The general Soviet strategy for carrying on the world struggle in the present phase rests on two propositions. The first is that general nuclear war must be avoided because the costs in physical damage and social disintegration would be intolerable. The second is that the world position and power of the "imperialist" states can be undermined by a persistent and aggressive campaign waged by methods short of war—political struggle, economic and scientific competition, subversion. Political struggle takes the form of a constant agitation designed to capture and organize in broad mass movements the sentiments which focus on the great issues of the current period—peace, disarmament, anticolonialism, social justice, economic development. By manipulating these issues and by dramatizing the growth of Soviet power, the Soviets are also trying to align the governments of the under-

³The Assistant Chief of Staff for Intelligence, Department of the Army, and the Director for Intelligence, Joint Staff, believe that, in spite of Sino-Soviet frictions, the USSR and Communist China will continue to be firmly allied against the West and will render one another mutual support whenever an important interest of one or the other is threatened by the non-Communist world.

developed and uncommitted states with the Bloc, and against the West. The Soviet leaders hope that the result will be a progressive isolation and loss of influence for the Western powers, divisions among them, and a decline in their ability to deal effectively with threats to their interests. This is what the Soviets mean by "peaceful coexistence"—a strategy to defeat the West without war.

17. This is not a strategy which aims immediately at the revolutionary seizure of power by Communist parties and the setting up of Communist regimes. The Soviets know that there are few countries where the Communists are strong enough to undertake such action, and where they themselves could count upon being able to deter intervention by non-Communist forces. The "peaceful coexistence" strategy is aimed mainly at gradually eliminating Western and building up Soviet influence around the world. The Soviets naturally expect that conditions will thereby be created which are favorable to the growth of Communist movements and which will sooner or later permit the latter to acquire state power peacefully, or by revolutionary action if necessary. Even though overt seizure of power is not now the main aim of the Soviet strategy, over a five-year period situations might arise where the gains from such action would seem important enough to the Soviets so that they would be willing to depart from their present general line.

18. The general line of Soviet policy estimated in the two preceding paragraphs falls within a range which excludes, on the one hand, the deliberate assumption of serious risks of general war, and on the other, abandonment of active struggle against the West. Within these limits we believe that the Soviet leaders will display both militancy and conciliation, at various times and in various proportions as seems to them most profitable. However, the Chinese challenge to Soviet authority involves basic questions of foreign policy, and brings severe pressure to bear on Soviet policy decisions. In trying to adjust to Chinese pressures, the Soviets may go farther in the direction of militancy and risk-taking

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than they otherwise would. On the other hand, if the Soviets should conclude that the Chinese were pushing them towards unacceptable dangers, they might move as a matter of temporary expediency toward a greater degree of stabilization in their relations with the West than they would otherwise consider, though without altering their long-term aim of establishing Communism throughout the world.⁴

19. As a general rule, we believe that the Soviets would consider that the initiation of limited war with Soviet or even Bloc forces entailed unacceptably high risks and political liabilities. However, it cannot be excluded that situations will appear in which they would conclude that some prize was great enough, and the military and political risks acceptable enough, to justify resort to such action. The Soviets are aware, however, that any limited war carries a danger of expanding into general war. We believe, therefore, that their attitude toward the involvement of Soviet or Bloc forces in local and limited war will be a very cautious one, and will be governed by their estimate of the risks and advantages, both political and military, in each situation. Even so, there is always a possibility that they may miscalculate risks.

20. Negotiations with the Western Powers over outstanding issues are conceived by the Soviets as one of the modes of waging the struggle of "peaceful coexistence." They hope that the pressures which they attempt to

⁴The Assistant Chief of Staff, Intelligence, USAF, agrees that the Chinese challenge to Soviet authority will, undoubtedly, have its effect on Soviet policy toward the non-Communist world; however, he believes that the relationship of Soviet military power vis-a-vis the US is the essential determinant. Further, as expressed in his footnote to paragraph 9, he believes that should the Soviets feel that they have achieved a clear military superiority, they are likely to adopt policies involving serious risks of general war.

build up against the West will result in concessions at the negotiating table. Intervals of more accommodating behavior and appeals for relaxed tensions are intended to encourage the making of such concessions. We expect this alternation of pressure and accommodation to be the regular pattern of Soviet behavior with respect to negotiation in the years ahead. Since the U-2 incident in May 1960 the Soviets have adopted a hostile and aggressive attitude which has made effective negotiation impossible. We believe that within the next six months or so the Soviets are likely to moderate this attitude and to attempt to get negotiations started again. It is also possible, however, that on the Berlin issue, where negotiation has so far failed to get them results, they will resort to intensified pressure and threats in an attempt to force the West into high-level negotiations under more unfavorable conditions.

21. We do not believe that the Soviets have a five-year plan for foreign policy in the sense that they set themselves particular goals to accomplish within a set time. Their policy is marked rather by an extraordinary opportunism, and in recent years by rapidity of response and vigor in execution. Over the next five years they probably look for new developments favorable to their interests to occur in a number of areas, but more especially in Africa, Latin America, Japan, Indonesia, and Iran. They probably intend to give particular attention to establishing a diplomatic and economic presence in Africa, to stimulating and exploiting movements on the Castro model in Latin America, and to encouraging the growth of a radical anti-American mass movement in Japan. Above all, however, they intend to build up their base of power within the Bloc itself, in the belief that during the next several years they can considerably improve their relative power position vis-a-vis the West. They believe that if they do so, more opportunities for Communist expansion, and more readily exploitable ones, will open up for them.

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DISCUSSION

I. SOVIET MILITARY POLICY

A. *Basic Views on War and Military Policy*

1. The Soviets see military power as serving two basic purposes: defense of their system and support for its expansion. Thus, one of the most important objectives of Soviet military policy is to deter general war while the USSR prosecutes its foreign policies by means short of actual hostilities involving Soviet forces. Military power is constantly brought into play in direct support of these policies, through the threats which give force to Soviet political demands, through the stress on growing power which is intended to gain respect for the Soviet state and its Communist system, and through the military aid and support rendered to allies, friendly but neutral regimes, and anti-Western movements.

2. The Soviet leaders realize that their deterrent must be credible in the sense that it rests upon powerful military forces. Moreover, they recognize that deterrence may fail in some key confrontation in which, despite their best efforts to retain control over risks, either they or their opponents come to feel that vital interests are under challenge. Against this contingency they wish to have a combination of offensive and defensive capabilities which will enable them to seize the initiative if possible, to survive enemy nuclear attack, and to go on to prosecute the war.

3. The Soviets evidently believe that the present overall military relationship, in which each side can exert a strong deterrent upon the other, will probably continue for some time to come. The Soviets are vigorously pursuing programs of research and development in advanced weapons, hoping if possible to create a strategic balance favorable to them. It is possible that some future technological breakthrough or advance would persuade them that they had acquired a decisive advantage which permitted them to take a different view of the risks of general war. We do not believe, however, that the Soviets base their military planning or their general policy upon the expectation that they will be able to achieve, within the foreseeable future, a military posture which would make rational the deliberate initiation of general war or conscious acceptance of grave risks of such a war.

4. A number of Soviet statements in recent years have expressed the view that limited war involving the major nuclear powers would inevitably escalate into general war. While such statements are intended in part to deter the West from local use of force, this official view also reflects a genuine Soviet fear of the consequences of becoming directly engaged in limited war involving Soviet and US forces. This probably

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also extends to involvement of Soviet forces with certain Allied forces in highly critical areas, notably Western forces in the European area. Nevertheless, they might employ their own forces to achieve local gains in some area adjacent to Bloc territory if they judged that the West, either because it was deterred by Soviet nuclear power or for some other reason, would not make an effective military response. They would probably employ Soviet forces as necessary if some Western military action on the periphery of the Bloc threatened the integrity of the Bloc itself. Should the USSR become directly involved in a limited war with US or Allied forces, we believe that the Soviets would not necessarily expand it immediately into general war, but that they would probably employ only that force which they thought necessary to achieve their local objectives. They would also seek to prevent escalation by political means.

5. Recent Soviet military writings call for professional study of the problems of nonnuclear combat, which could lead to some modification of the official view on limited war. However, we believe that the attention now being devoted to this problem is primarily responsive to indications of US interest in building NATO's capabilities for nonnuclear combat. In our view, it does not reflect any new Soviet conclusion that the USSR can now launch such wars without great dangers of subsequent escalation.

6. The USSR has regularly recognized the importance of the "war of national liberation," in which pro-Soviet or anti-Western forces challenge colonial or pro-Western regimes in a primarily internal conflict. In practice, Soviet behavior has followed neither the course of full support to all these wars, as Soviet propaganda often alleges, nor the course alleged by Khrushchev's Chinese critics, who claim that he withholds support entirely because of exaggerated fears that such a conflict might spark a general war. The USSR has rendered active assistance in some cases, such as Laos and Yemen, and little or none in others, such as Algeria and Angola, depending upon such practical factors as accessibility, the risk of defeat, and the attitude of other powers involved.

7. The USSR has also shown a recent willingness to provide some non-Bloc recipients of its military aid with more advanced equipment than heretofore. In some cases, notably Cuba and Indonesia, Soviet personnel have been employed to man this equipment, and are training indigenous specialists to operate it. This represents a significant departure from previous Soviet practice, which may be extended to other areas in the future.

8. As new and favorable opportunities arise, the Soviets will continue to offer these various kinds of assistance, and they may do this more frequently and aggressively in the future if their efforts to expand

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Soviet influence by political and economic means encounter continued frustration. We believe, however, that the Soviets will remain chary of any great commitment of prestige to the support of belligerents over whom they do not exercise substantial control or in circumstances in which they feel that winning is unlikely, and they will seek to avoid risk of widened hostilities which might result from "wars of national liberation." In particular, we believe that the Soviets will be very reluctant to commit their own forces openly in conflicts where they would risk a direct confrontation with US forces.

B. Soviet Military Policymaking

9. The application of these basic attitudes to particular situations and to the allocation of resources does, of course, pose serious policy problems. A number of additional factors have long affected the character of Soviet military policy. Geography and the traditions bound up with historical experience have inclined the Soviets toward a military preoccupation with Western Europe and a stress on large-scale ground combat. The capabilities and structure of US and other opposing forces influence directly both the size and shape of Soviet forces and exert a general upward pressure upon requirements in all fields. Perhaps most important is the technological and economic base of the nation, which constantly offers prospects for more effective weapons but also determines the extent to which these opportunities can be exploited without too great a sacrifice in other programs.

10. These factors, pointing in many contradictory directions, do not make for easy or unanimous decisions. Indeed, we have clear evidence of disagreement, compromise, and even reversal in the formulation of military policy in the last three years. This process of policymaking in the USSR appears in large part to involve the same problems familiar to US decision-makers. In addition, however, certain special features stand out. Fully informed Soviet military discussion, for example, seems to involve a smaller circle than in the US. Beyond the political leadership, some military officers, and a limited number of scientists and engineers, we know of no body of civilian advisers or publicists in the USSR comparable to the social scientists involved in the evolution of US military thinking. This is in part due to the great Soviet emphasis on security, which has the additional effect of reducing the flow of information within the officer corps. As a result, the Soviet military appear to experience special difficulty in adjusting their doctrine and concepts to the rapid changes characteristic of the postwar period. The continuing major influence of World War II commanders and the vivid memories of the Soviet experience in that war also contribute to a resistance to new concepts which is evident in professional discourse.

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11. Military programs have become more complex and expensive, and the professional recommendations of the military leadership on military problems have a greater impact on economic and foreign policy decisions. Furthermore, the political climate which has developed under Khrushchev is one which permits continuing discussion on a variety of problems, and the military leaders have used this opportunity to expound their views. With military and economic debates proceeding simultaneously and in close dependence on each other, it seems likely that the arguments of the marshals have been supported by those political leaders who did not wish to permit programs for consumer goods to impinge upon allocations to heavy industry.

12. We do not believe that the military aspires to an independent political role within the political system, and if it were to, party traditions and controls appear strong enough to defeat any efforts in this direction. But if, as we expect, the military and economic choices facing the USSR become more acute, the senior officers will probably find themselves more deeply involved in matters of general policy.

C. The Recent Course of Military Policy

13. The most important viewpoints in the controversy over military policy of the last few years have been those represented by Khrushchev and a few military theorists, on the one hand, and the majority of the senior military leaders, on the other. Three major differences have distinguished Khrushchev's approach to defense policy from that of the military leaders. First, Khrushchev is heavily concerned with the political uses of military power, whereas the professional responsibilities of the marshals require them to look in the first instance to actual war-fighting capabilities. Second, Khrushchev has asserted that a general war is almost certain to be short, with victory decided in the strategic nuclear exchange and with conventional arms, particularly theater forces, playing a quite secondary role. Most military leaders, on the other hand, appear to believe that general war would probably, but not certainly, be short but that, in any event, its conduct would require high force levels for most of the traditional service arms, including a multi-million man army. Third, Khrushchev is far more concerned than the marshals to keep military expenditures in check in order to meet what he regards as pressing needs in the civilian economy.

14. All these considerations were involved in the reorganization of the armed forces which Khrushchev inaugurated in January 1960. The essence of his plan was to place main reliance on nuclear missile forces and, on this basis, to reduce military manpower substantially and to accelerate the retirement of older weapons. This, he asserted, was the force structure best suited both to deter war and to fight one if necessary; moreover, it would release men and money for the civilian economy.

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15. From Khrushchev himself we know that this plan and its strategic justification were accepted only reluctantly by the military leadership. A controversial discussion ensued, encouraged by the regime, in which high officers debated, polemicized, and explored the military implications of modern warfare in a far more systematic fashion than previously. Several schools of thought became apparent, but a predominant view soon emerged which accepted the likelihood that the initial phase of a general war would be decisive, but went on to argue that even a relatively short war would require large forces of all types capable of defeating comparable enemy forces, overrunning base areas, and occupying territory in Eurasia. This discussion also focused attention on the enormous difficulties of mounting major military operations after receiving the full weight of a Western first strike, and the resulting importance, if in the Soviet view war became imminent and unavoidable, of seizing the strategic initiative by a pre-emptive attack.

16. At present, official military doctrine holds that a general war will inevitably involve the massive use of nuclear weapons, will begin with a strategic exchange, and will develop almost simultaneously along fronts of engagement as well. Strategic missile forces will play the primary role. The course and outcome of the war may well be decided in its initial phase by strategic nuclear weapons. However, the Soviets hold that such a conflict will not necessarily be short, and envisage the possibility of a long war involving protracted operations in Eurasia. Therefore, while current doctrine emphasizes a military policy of building strategic attack and defense capabilities, it supports as well the maintenance of large theater and naval forces, for use both in the initial and the possible subsequent phases of a general war.

17. We believe that debate continues in the USSR, not only over subsidiary propositions, but perhaps over some of the central tenets of this doctrine. The course of the debate was heavily influenced by external events in 1960-1961 which, intruding upon the discussion, undermined some of Khrushchev's contentions and permitted the military to retrieve some concepts which he had discarded. Thus the U-2 affair cast doubt on the adequacy of Soviet air defenses, on the efficacy of Soviet security, and on the wisdom of Khrushchev's efforts to relax tensions in relations with the US. In the following year, the US took decisions to step up both its strategic attack and general purpose forces. In Vienna, Khrushchev determined that the US did not regard the relationship of military power as requiring it to make major concessions on the Berlin question. All these developments called into question the adequacy of the Soviet military posture, both for supporting foreign policy and for conducting general war if necessary. In these circumstances, Khrushchev made such demonstrative military moves as the public suspension of the manpower reductions and the resumption of nuclear tests.

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18. At about the same time, another burden was laid on Soviet military policymaking. For some months, US public disclosures had hinted that Soviet ICBM strength might be much smaller than had previously been believed. Beginning in the fall of 1961, the US began to assert this conclusion with great conviction, and to assert more strongly that the US was the strategic superior of the Soviet Union. From US statements and behavior, the Soviets could almost certainly judge that their security had been penetrated in an important way, probably one which, by permitting the US to locate Soviet targets, had a tangible effect upon the military balance. Their fears that no major Western concessions on Berlin would be forthcoming must have been strengthened. And the image of Soviet superiority, which they had heavily exploited to document their claims of the inevitable triumph of their system, was badly damaged.

19. It was against this background that the USSR took its decision to deploy strategic missiles to Cuba. This move involved a host of policy considerations and judgments which are not yet fully clear. In its military terms, however, it appears to have been a response to the question of how to create new opportunities for Soviet foreign policy by improving the strategic position of the USSR vis-a-vis the US, at some acceptable cost and at some early date. Even deployment at the levels detected promised a significant increase in first-strike capabilities for general nuclear war, and the Soviets may have intended to follow this up by establishing a larger missile force as well as a submarine base.

20. Khrushchev, however, probably considered its main impact to be psychological. At one level, the deployment and its acceptance by the US was intended to demonstrate Soviet might and US inability to contain it, thereby reversing the tendency of world opinion to regard the West as strategically superior. At another, however, it was intended to increase the deterrence laid upon the US in cold war confrontations. Khrushchev evidently felt that, despite all the military problems involved in making effective strategic use of Cuba in wartime, the deployment would have a powerful impact on US opinion which would reduce resistance to his political demands, in the first instance those concerning Berlin.

D. Problems of Future Military Policy

21. The Cuban adventure and its outcome both highlighted and heightened the dilemma of the Soviet leaders. Both the deployment and its reversal constituted a tacit public admission that the USSR was in a position of strategic inferiority. Among its other results, the Cuban fiasco has almost certainly thrown the Soviets back onto a further re-evaluation of their strategic posture.

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22. Programs already under way will largely govern the size and composition of Soviet strategic forces through about mid-1964, but new decisions taken this year could significantly affect force levels thereafter. We are unlikely to learn directly of such decisions. Moreover, the physical activities which might reveal their nature will probably not be apparent for another year or more. In considering future Soviet force levels, it is therefore necessary to explore the various alternatives now open to the USSR.

23. Confronted with the continuing buildup of US forces for inter-continental attack programmed for the next few years, Soviet planners may be considering a wide range of alternatives. At one extreme would be an attempt to achieve such a clear superiority over the US in strategic offensive weapons that they would have a high assurance of destroying US nuclear striking forces prior to launch. At the other extreme would be the acceptance of continued strategic inferiority, perhaps coupled with genuine efforts to reach agreement with the West on arms control.

24. The first of these extreme alternatives is probably now regarded as unattainable. Thousands of Soviet missiles would be required to give the Soviet leaders a high assurance of destroying even the fixed bases of US nuclear forces programmed for the mid-1960's. We do not believe that the Soviet leaders would be prepared to impose a strain of this magnitude upon the Soviet economy. In addition, the Soviets would almost certainly expect the US to detect such an effort, and thereupon to step up its own program so as to raise Soviet requirements still higher. Moreover, US warning capabilities, fast reaction times, and mobile forces (airborne bombers and missile submarines) already have reduced Soviet capabilities, against US retaliatory forces. We believe that the Soviets will continue to estimate that, throughout the period of this estimate, the US will retain retaliatory capabilities which could not be eliminated by such striking forces as the USSR could acquire.

25. The second of these extreme alternatives might be considered by the Soviet leaders. Even if current strategic weapons programs were allowed to level off after 1964, the Soviets would possess a powerful deterrent force. Moreover, they might hope to reduce US superiority by means of disarmament agreements. But the main appeal of this alternative would be economic; resources would in time be made available to reverse the current slowdown in economic growth. However, we have seen as yet no persuasive indications that the USSR is prepared to move very far in this direction. The Cuban venture has indicated that, at least to date, the Soviet leaders are far from willing to accept a position of strategic inferiority.

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26. Between these extreme alternatives, we believe that the Soviets have almost certainly considered an effort to attain rough parity with the US in intercontinental weapon systems. Soviet military leaders almost certainly have urged enlarged and improved forces of ICBMs and missile submarines. However, a major Soviet effort to attain parity in the near term would require either a substantial increase in the Soviet military budget or sharp cuts in other types of forces. Moreover, the Soviets would almost certainly reason that the US would detect an effort of such magnitude, and that they could have no assurance of winning the intensified race which would ensue. Our evidence does not indicate that the Soviets are attempting to match the US in numbers of weapons for intercontinental attack; we believe, however, that they will attempt to offset US superiority by other means.

27. Soviet statements and military writings suggest that the Soviet leaders see in technological achievements the means by which they may improve their total strategic position relative to that of the US. This consideration may lie behind the testing of very high-yield weapons, the claimed development of a global missile, the high priority given to the antimissile program, and the Soviet interest in military space programs. By such means, the Soviets may attempt to attain rough parity or even superiority in the total strategic context, although they remain numerically inferior in delivery vehicles. Hardened ICBMs and submerged-launch submarine missiles will contribute to Soviet strategic capabilities. In addition, over the next few years the ICBM force will probably come to include new large missiles, armed with very high-yield warheads or capable of global ranges. Moreover, the USSR is almost certainly investigating the feasibility of space systems for military support and offensive and defensive weapons.

28. In defense against strategic attack, the major new element is the antimissile program, where deployment of one system has already begun at one location, and research and development toward a more advanced capability is continuing. The Soviets may see a possible solution to their strategic confrontation with the US in a combination of antimissile defense plus very effective though numerically inferior intercontinental striking forces. The technical difficulties as well as the great expense of any extensive antimissile deployment will be restraining influences. Nevertheless, we believe that deployment of antimissile defenses may be the largest new Soviet military program in the period of this estimate.

29. Although we believe that Soviet military policy is most likely to continue along current lines, we cannot exclude the possibility of new departures in military policy, perhaps resulting in major changes in the composition of the Soviet military establishment and in the relative emphasis given to forces designed to accomplish the major military missions. Drastic cuts in the theater field forces remain a possibility;

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while Khrushchev's proposals for manpower reductions have been shelved for the present, economic pressures and developments in military technology almost certainly will cause this subject to be reconsidered. It is also possible that the increasing involvement of the USSR in the more remote areas of the world will lead to the development of new capabilities for distant, limited military action. In this connection, the Soviets may attempt to acquire base and logistical support rights in key non-Bloc countries, but we have no evidence that the USSR has raised this question with these countries.⁷

30. In general, Soviet military policy will continue to be shaped, not only by a variety of strategic, historical, technical, economic and political factors, but also by differing views about the relative importance of these factors, and shifting compromises among these views. As a result, we believe that the numerous aspects of this policy will not always be wholly consistent with each other, and that force structure and future programming will reflect neither a fully-integrated strategic doctrine nor a firm timetable for achieving specified force levels. In any case, we do not believe that the Soviets conceive of existing weapons systems as the answer to their military problem or that they have fixed and inflexible plans for their force structure in the period five to 10 years from now. They have debated and revised some of their ideas, and they will probably do so again. They have made scientific military research and the development of new weapons matters of high urgency, and they have a demonstrated capability to concentrate human and material resources on priority objectives. If they develop new concepts or new weapons which give promise of military and political advantage, they will seek to add them rapidly to their arsenal and to gain maximum benefit from them. Thus, during the next five years, we expect the Soviets to be working on even more advanced weapons with which they may hope to enhance their capabilities at a later date.⁸

II. SOVIET HIGH COMMAND STRUCTURE

31. We believe that during the past two or three years the Soviet military high command structure has been modified to speed the process of initiating or responding to strategic nuclear attack. The growth of nuclear and missile forces on both sides has almost certainly persuaded the Soviets to establish the command and control channels necessary for the swift initiation of military operations upon the decision of the political leadership.

⁷ For a discussion of the limitations imposed on such Soviet overtures by the receptivity of other countries, see NIE 10-63, "Bloc Economic and Military Assistance Programs," dated 10 January 1963.

⁸ With reference to paragraphs 23-30, see the Assistant Chief of Staff, Intelligence, USAF, footnote to Conclusion E.

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32. We have information, some of it from classified documents and some from public statements, about both a Supreme Military Council and a Supreme High Command. Khrushchev is chairman of the Council and Supreme High Commander. The Council, a body of high-level party, government, and military officials, has existed since before World War II to provide a forum for discussion and decision on major issues of military policy. The Supreme High Command directed military operations during World War II with Stalin at its head, but was disbanded thereafter. Such information as we have suggests that steps have been taken in recent years to designate membership in the Supreme High Command and to develop procedures to permit the quick assumption by this body of top level control of military operations under Khrushchev should events so dictate.

33. Adjustments in the structure of the Soviet high command have apparently been closely related to the growth of the USSR's strategic defense and long-range missile forces. A new rocket command was established in 1960 and designated a main component of the Soviet armed forces. This change followed by about five years the elevation of the Soviet air defense component to similar status. At present, there are five major force components administered by main directorates or equivalent headquarters within the Ministry of Defense: ground, naval, air, air defense, and rocket.

34. Highly centralized civilian control over the Soviet military establishment is exercised through the Council of Ministers, which includes the Minister of Defense. The Minister is assisted by the unified General Staff of the armed forces, which formulates the overall military program and would probably constitute the principal headquarters element of the Supreme High Command in time of war. Party and government leaders reportedly participate regularly in the deliberations of the Supreme Military Council. Additional channels for exercising party control over the military include the Main Political Directorate of the armed forces and the numerous party officials who are assigned to all levels of the military establishment.

35. The flow of operational orders from the Minister of Defense to the Soviet armed forces follows no rigid or consistent pattern. Commanders in Chief of the Strategic Rocket Forces, Long Range Aviation, the Air Defense Forces, and the Navy are believed to have direct operational control over the forces assigned to them. On the other hand, ground force components are operationally controlled by the commanders of the Military Districts and the Groups of Forces. The Commander in Chief of the Air Force similarly has no direct operational control over air components. The operations of other than Long Range Aviation air elements are controlled by the commands or forces to which they are assigned, i.e., commanders of Groups of Forces, Military Districts, Air Defense Districts, Fleets, and Airborne Forces.

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West remained unfavorable. The economic strain of the arms competition loomed as costly as ever. There is evidence of considerable hesitation and re-evaluation in Soviet policy since the failure of the Cuban missile venture, although since about mid-1963, a number of developments have occurred which suggest the general direction Khrushchev proposes to follow. In the economic sphere, short-term plans for 1964-1965 have been revised in order to shift resources, notably to the chemical industry. Consistent with this has been a change in foreign policy tactics, beginning with the test ban, in an effort to relax East-West tensions. The attempt to create a more favorable international climate, in turn, has allowed Khrushchev to secure reductions in the overt defense budget as well as to propose some reductions in military manpower. The sum total of these various steps in related fields suggests that Khrushchev has settled on a general line of policy to contain the arms race, if only in a limited way, and to reduce some of its burden on the Soviet economy.

19. In strategic terms, this line of policy suggests a recognition of the necessity to accept the general balance of power which emerged in the Cuban crisis. Presently, and for some time to come, the Soviet strategic forces will be numerically inferior to those of the US and more vulnerable to attack. The Soviet leaders must recognize, therefore, that the US would enjoy a considerable advantage should it strike first, and that the relative invulnerability, the fast reaction time, and the mobility of US strategic power make a Soviet first strike completely irrational. Nevertheless, in assessing the military balance, the Soviets are confident that they possess a credible deterrent based on both their massive capabilities to devastate Eurasia and their growing intercontinental striking power. Thus, the Soviets see the present situation as one in which both sides are deterred from deliberately initiating general war or from knowingly initiating courses of action which would involve grave risk of such a war.

II. FACTORS AFFECTING FUTURE SOVIET MILITARY POLICY

20. Soviet decisions as to force structure and military programs over the next several years are likely to be made in the context of a situation in which, although the US enjoys a clear strategic advantage, a condition of rough mutual deterrence exists. The Soviets will seek to improve their strategic capabilities *vis-a-vis* the US, however, policy decisions will be influenced by the continuing strain on economic resources, and the pressure arising from competition with the US in scientific and technological developments with military applications. Such decisions will be greatly influenced also by the Soviet estimate of the political situation, the opportunities which it affords, and the contribution which military power can make to the realization of these opportunities.

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21. We believe that in these circumstances the primary concern of Soviet policy will be to continue to strengthen their deterrent against US attack primarily through a gradual buildup of ICBMs, hardening of sites, and increased mobility through missile submarines. At one time the Soviets may have considered an attempt to achieve capabilities sufficient to neutralize US strategic forces in a first strike, and they almost certainly have also considered the lesser goal of achieving rough parity with the US in intercontinental weapon systems. In the aftermath of Cuba they may have considered a substantial increase in their military effort. Our evidence does not indicate, however, that the Soviets are presently attempting to match the US in numbers of intercontinental delivery vehicles. Recognition that the US would detect and match or overmatch such an effort, together with economic constraints, appears to have ruled out this option. On the other hand, available evidence on the development of large nuclear warheads and compatible delivery vehicles strongly suggests that the Soviets may be seeking to improve their position relative to the West by increasing the destructive power of their numerically inferior intercontinental strategic attack forces.

22. Continuation of present lines of policy will ensure the Soviets of a growing credibility for their deterrent. However, the dynamism of Soviet policy depends to a great extent on the proposition that the balance of forces in the world is shifting in favor of the Communist world. The Sino-Soviet rupture has already badly damaged this thesis, as has the inability of the Soviets to match the West in military power. It is conceivable that at some point a Soviet leadership would come to believe that they had to forego their expansionist aims, unless they could greatly improve their relative military strength, or at least refurbish the world's image of this strength. They might even be willing to make new economic sacrifices or assume some risks in order to accomplish this. What precise programs they might undertake in pursuit of such an aim we cannot now say, but we cannot rule out that changes in the scale or character of Soviet programs would come about in this way.

23. Internal political considerations resulting from changes in the leadership could have important consequences for military policy. It is likely that Khrushchev will have passed from the scene by the end of the decade, and the ages of the marshals suggest that there will be a wholesale replacement of the top military leadership in this period. What the attitude and policies of a new set of leaders will be cannot be estimated with any certainty. If, as we believe likely, economic and military questions are still paramount issues when Khrushchev departs, the professional advice of the military is likely to grow in importance. The chances for important changes in military policy may improve if a protracted succession struggle develops, but we believe it unlikely that radical departures would occur unless at the same time there were significant changes in the economic or strategic situations confronting the USSR.

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24. Any of a host of other changes and opportunities could also affect Soviet military policy and force structures. For example, increasing Chinese hostility toward the USSR could retard reductions in conventional forces by strengthening the arguments of the traditionalists and by posing the need for augmented garrisons near the Chinese borders. In addition, Communist China's unremitting challenge to the Soviets for leadership of the world Communist movement may increase Soviet readiness to support "wars of national liberation." Situations may arise which would offer the Soviets an opportunity for extending their military capabilities through foreign bases or logistic facilities. A further strengthening of NATO would probably also increase Soviet caution with respect to reductions, as might the further loosening of the USSR's hold on its European Satellites. Soviet military requirements could also be affected by shifts in the political and military alignment of Western nations, or by new crises or a heightening of international tensions. While developments such as these are unlikely to bring about drastic changes in Soviet military policy, they would probably affect the pace of evolution in policy and force structure.

Economic Constraints

25. We believe that over the next several years the Soviets will strive to hold down defense and space expenditures so as to release scarce resources to other sectors of the economy. Despite Soviet efforts to economize, we do not foresee a substantial decline in Soviet military expenditures, and they may continue to rise. But the rapid growth rates of recent years probably will not be maintained.

26. The announced four percent reduction in the overt defense budget for 1964 does not necessarily mean that Soviet defense spending will in fact be smaller than before. In the past, planned and actual Soviet military expenditures have differed. Moreover, the published defense budget has covered only about two-thirds of estimated Soviet defense expenditures in recent years. The announced reduction in the defense budget may reflect to some extent anticipated savings from reductions in military manpower, although we have no evidence that force reductions are currently underway. In the longer term, some reductions in military manpower will almost certainly be made. But, while reductions in manpower alone could effect some savings, even drastic cuts would not solve the basic Soviet economic problem: the scarcity of high quality resources.

27. The Soviets could make scarce resources available to the economy in the short term by sharply cutting back or abruptly halting current programs for the production and deployment of major weapons systems to which substantial resources are presently committed. Such extreme measures would be highly wasteful of resources, however, and they would almost certainly encounter strong resistance from the mili-

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tary. Considering the reliance which Khrushchev apparently places on the deterrent effect of strategic weapons, we think it unlikely that he would propose drastic interruptions in current deployment programs, but stretch-out could occur for either technical or economic reasons.

28. It seems to us more likely that the Soviet leadership sees the present as an advantageous time to plan for longer term savings in scarce resources by canceling, curtailing, deferring, or stretching out the production and deployment of some of the follow-on weapon systems which are now under development. Our evidence indicates that certain very large programs are approaching completion. The deployment of MRBMs and IRBMs appear to be virtually complete; while we estimate continued improvement of these systems, it seems unlikely that they need to be completely replaced by follow-on systems in the next five years or so. The deployment of SA-2 defenses will probably be substantially completed in the next year or two, and it appears unlikely that deployment of the low altitude SA-3 will reach the scale of the SA-2 program. Thus, completion or near-completion of these very large programs will probably make resources available for other uses.

29. Programs for follow-on offensive and defensive systems are almost certainly under continuing review. Potential military claimants for additional resources include follow-on ICBM and missile submarine systems, antisubmarine warfare systems, advanced aircraft for various purposes, another round of new equipment for theater ground forces, and military space systems. If the Soviets program early and substantial deployment of such systems, many of the resources freed by the completion of other major military programs would be absorbed. But it is also possible for them to adjust military programs so as to channel resources into nonmilitary sectors of the economy.

30. Overshadowing all other potential military claimants for resources, however, would be the deployment of ABM defenses. In this field, the evidence strongly suggests that despite intensive developmental efforts over many years, the Soviets have not yet been successful in developing a system for defense against strategic missiles which they consider satisfactory. The Soviet leaders have apparently thus far authorized only very limited deployment, and we believe that they have not yet decided whether to commit the vast resources needed to provide ABM defenses for a major portion of their population and industry. Considering the long lead times involved in the deployment of so complex a system, it is possible that, if a decision is delayed two or three years, even a large ABM deployment program would not begin to have a major impact on the economy much before the end of the decade. If at that time, Soviet strategic striking forces have reached planned

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levels, resources could be diverted to an ABM program. Unless some such diversion of resources can be made within the military establishment, any large-scale ABM deployment program will exert a strong upward pressure on Soviet military expenditures.

31. The Soviet space program must also have come under scrutiny by the Soviet leaders in their search for the high-quality resources required for economic expansion. The space program to date has made extensive use of military facilities and hardware. The program has required scarce resources, however, and ambitious future space activities, involving more specialized facilities and hardware, would considerably increase the drain on resources. Limitations in available resources will almost certainly prevent the Soviets from pursuing all the space programs which would be within their technical capabilities within this decade. We do not expect any major and obvious cutback in Soviet space activities, but the resources pinch may cause the Soviets to limit or stretch out certain expensive, long-term space programs which they once contemplated.

Technical Factors

32. The high and increasing cost of military R and D and the current budgetary squeeze will undoubtedly force some reappraisals by Soviet planners, especially on highly expensive developmental projects. Some programs considered to be of marginal utility may be cut back or suspended. However, evidence available indicates continued large-scale efforts in the major categories of military R and D: ballistic missiles, ABMs, nuclear submarines, ASW, aircraft, nuclear weapons, and CW. Further, we see continued efforts of considerable magnitude on the scientific fronts supporting military requirements, such as computer technology, meteorology, oceanography, geophysics, and electronics. This evidence indicates that reductions in the present level of Soviet expenditures for military R and D are unlikely, although there is some evidence that the rate of growth is declining.

33. The Soviets almost certainly consider that they can ill-afford to fall behind the US in R and D on advanced weapons systems. Further, Soviet statements and writings have suggested that the Soviet leaders see in technological achievements a means for possibly improving their strategic position relative to the US. They will continue to make military research and development a matter of high urgency, and they have a demonstrated capability to concentrate human and material resources on priority objectives. Even with economic factors imposing restraints on military policy, the Soviets will seek urgently to develop new concepts or weapons which give promise of significant military and political advantage. Such weapons or concepts, if successfully developed, would be prime candidates for rapid addition to the Soviet arsenal. We do

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not believe, however, that Soviet policy can be based on the expectation of achieving technological advances or breakthroughs of such dimensions that they would reverse the strategic balance within the period of this estimate.

III. FUTURE TRENDS IN MILITARY PROGRAMS

34. The preceding discussion forecasts no drastic increase or decrease in the total Soviet military effort within the present decade. Our evidence on current Soviet military development and deployment programs points to a present Soviet intention to maintain a large military establishment and to continue improving its capabilities. Translated into force structure, this continuation of policy by no means implies a static situation. We believe that the next several years will bring important changes in the Soviet military posture, but that these changes are more likely to be evolutionary than revolutionary in nature.

Strategic Attack Forces

35. In the buildup of strategic strike forces, the Soviets have recently been placing major emphasis upon weapons for intercontinental attack, particularly ICBMs. We believe that by the end of the decade they will have several hundred ICBM launchers, a sizable force of missile submarines, and a significant though reduced force of bombers. In the ICBM force, qualitative improvement will be emphasized; we believe that the Soviets will introduce follow-on systems characterized by better accuracy, larger payloads, better reliability, and easier handling and maintenance. We believe that they will also attempt to improve survivability by deploying a greater proportion of their ICBMs in hard sites, by providing their submarines with submerged launch ballistic missiles, and by increasing the readiness of their strategic forces. If our estimates are correct, the Soviets will not be able to pursue a strategy of destroying US nuclear striking forces prior to launch, but they will have a force capable of attacking major US cities and soft military targets, as well as a capability for retaliation even after an initial US attack.

36. We believe that Soviet strategic attack forces intended for Eurasian operations are nearing planned levels. The large missile forces deployed primarily against Europe will probably remain at about their present size, but survivability will be enhanced through hardening and possibly by the introduction of ground mobile systems. The medium bomber force will probably decline in size over the next several years, but capabilities will probably improve with the continued introduction of supersonic aircraft. Thus the Soviets will maintain massive forces for strategic attack in Eurasia and will improve the quality of these forces.

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DISCUSSION

I. THE KHRUSHCHEV ERA

1. The Khrushchev era was a period of fundamental changes in the armament, organization, and operational concepts of the Soviet armed forces. Khrushchev inherited a military machine comprising enormous land armies for offensive operations, masses of anti-aircraft guns and fighters for strategic defense, and only limited nuclear capabilities. By the end of 1964, the force included a formidable nuclear delivery capability for offensive operations, modernized missile, air, and naval forces for strategic defense, and smaller, but greatly modernized theater forces for land campaigns in a nuclear environment. This radical change in the nature of the military establishment was accompanied by important changes in basic Soviet military doctrine and policy. In the mid-fifties, Soviet military theorists concentrated heavily on large-scale campaigns in Europe; by the early sixties they were giving increased attention to the complex problems of intercontinental strategic exchange.

2. Khrushchev's personality and political skill accelerated the revolution in Soviet military affairs but did not cause it. Marked advances in military technology, the rising costs of modern weapons, and the growing strength of NATO would have forced change in the Soviet military establishment in any case. But Khrushchev grasped the politico-military significance of the new technology far quicker than most of his conservative military hierarchy; his designs for adjusting the military establishment to new situations were often much too bold for most of the Soviet marshals. Although Khrushchev used a wide variety of polemical, political, and organizational devices to overcome their opposition, he often received only grudging support for his military policies—sometimes he encountered near defiance.

3. While the marshals approved of the new missiles, with rare exceptions they opposed Khrushchev's accompanying military policies, in particular his penchant for viewing military forces more as political tools than in terms of their actual use in warfare. Khrushchev looked upon his missile forces primarily as a barrier against war. Aware of Soviet strategic inferiority, he nonetheless believed that the missile forces would serve to deter a direct attack on the USSR. He also believed that they could be used to dissuade a potential enemy from opposing Soviet interests in local conflicts for fear of provoking a direct confrontation with the Soviet Union. He argued that, if general war should occur, it would be decided in a very short time by the initial nuclear exchange. Consequently he often spoke and sometimes acted as though his missile forces constituted in effect an all-purpose substitute—and indeed a less expensive substitute—for the diverse military capabilities which the Soviet Union had long maintained.

4. Such a politico-military doctrine struck at some fundamental premises of the Soviet military establishment. It called into question such specifics as the value of large theater forces and the mass-mobilization system. More

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fundamentally, it cast doubt on the relevance of traditional military experience. Khrushchev's emphasis on deterrence of all wars through strategic rocket forces left scant basis for the military to develop operational concepts and requirements for other components of the forces.

5. Khrushchev's decision to embrace openly a deterrent military policy was clearly based in part on economic considerations. The kind of forces advocated by the marshals to fight a war if it should come, including huge ground forces, were obviously much more expensive than those advocated by Khrushchev with his faith in the efficacy of deterrence. But Khrushchev's rationale for his military policies also indicated that he had considered, at least broadly, the technical aspects of strategic nuclear warfare. He concluded that the requirements for a successful disarming strike were enormous and, further, that the first exchange of a nuclear war would wreak such damage that subsequent operations could have only minor effects on the outcome. These views were in some respects oversimplified, but they were quite sophisticated when compared to those held by most Soviet marshals at the time.

6. Under Khrushchev's prodding, and with the actual advent of large numbers of new weapons, the military leaders began to explore in new depth the implications of nuclear warfare. They did so, however, not so much from the standpoint of defining what force levels might be adequate for deterrence, but primarily in order to formulate requirements for fighting this new kind of war. In the process, the force commanders concluded, not that their arms of service had no further role to play, but that they confronted new and more demanding requirements. They constantly warned that the USSR should be prepared for the contingency in which deterrence had failed. Neither Khrushchev nor the more conservative marshals ever wholly prevailed in Soviet doctrine, and the forces actually deployed reflected compromises between their views.

7. Beyond these purely military disputes, the marshals were probably alarmed by certain political decisions entailing commitments and responsibilities, some of which Soviet capabilities could not sustain. Anxious to make political capital of the new missile forces, Khrushchev precipitated a Berlin crisis in 1958 which found the military establishment unready to overawe the US in strategic terms. His ill-fated Cuban venture presented the military leaders with the grim prospect of a military confrontation with the US under particularly unfavorable circumstances. And the military implications of the rift with Communist China must have added to the marshals' concern over the wisdom of Khrushchev's leadership.

Changes in the Strategic Relationship

8. Dramatic successes in programs to develop offensive missile systems led the Soviet leadership by the mid-1950s to foresee the day when a massive array of nuclear-armed strategic missiles would remove the USSR from the galling position of gross strategic inferiority. Beginning in 1955 (when MRBM deployment started), the Soviet missile force grew rapidly. ICBM deployment pro-

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grams were slower and often uneven, but by the end of 1963, the USSR had a strategic missile force targeted against both Eurasia and the US which had indeed sharply changed the nature of the East-West strategic relationship. The bulk of the strategic missiles were of medium and intermediate range, holding Europe hostage against US strategic attack; the ICBM force, though much smaller, increased Soviet assurance that the US would be struck in a general war. This marked advance in Soviet strategic stature was further enhanced by Soviet space achievements.

9. The buildup of strategic missile forces on both sides impelled Soviet military thinking to grapple with the global nature of modern war. In this context the Soviets soon found their new missile forces deficient in important respects. In exploring the nature of general war, they naturally discovered that enormous advantages belonged to the side which struck first. But their own force was neither large enough to risk a first blow nor well enough protected to assure them that the enemy would not be tempted to attack. Indeed, concern for the vulnerability of the Soviet strategic missile force—soft launchers grouped by twos and fours—probably became acute once the Soviets discovered that the US had penetrated their security and located their missile sites.

10. One course of action open to the Soviets was to multiply their strategic attack forces to such a high level that in time of crisis US policy would be powerfully restrained by fear that the Soviets might risk a first strike. But Soviet advances had spurred the US into large programs of its own which made it difficult for the USSR to set force goals which were economically feasible and could promise, when reached, to have this effect. Accordingly, the Soviets chose the alternative means of strengthening their deterrent by improving retaliatory capabilities; they sought to achieve this by some increase in the size of strategic attack forces, by diversification and improvement of delivery means and nuclear warheads, and by protection of their forces through hardening, dispersal and reduced reaction times.

11. Measures to strengthen the Soviet deterrent also included vigorous efforts to revamp strategic defense capabilities. Surface-to-air missiles replaced AAA guns. Several new-generation supersonic interceptors with all-weather capabilities and air-to-air missiles were introduced into air defense units to replace some of the old day fighters. Warning and control systems were expanded and sophisticated. The R&D program to develop anti-missile defenses was given high priority. Despite impressive improvements, however, Soviet strategic defense capabilities did not overtake the increasingly sophisticated and diversified Western attack capabilities—in particular, the growing threat posed by ballistic missiles.

General Purpose Forces

12. Khrushchev's view of the nature of modern war made land armies, tactical aviation, and surface fleets the prime candidates for reduction to offset the heavy economic burden imposed by Soviet efforts in strategic attack and defense and the space programs. By the late 1950s, Khrushchev's determination to reduce

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the size of theater forces was evident as he poured scorn on the utility of mass armies in modern warfare. Soviet military manpower had already been cut by about two million men between 1955 and the end of 1959, largely at the expense of ground forces. In January 1960, Khrushchev announced his intent to reduce military manpower from 3.6 to 2.4 million. He made it clear that this cut was to be absorbed largely by general purpose forces; that the intended cut in these forces would exceed 1.2 million was implicit in the rapid growth of strategic attack and defense elements.

13. This challenge was more than conservative Soviet military leaders could bear in silence, and their objections appeared in the open military press. Most spokesmen defended multimillion men armies on the grounds of their vital role in general nuclear war. Others almost certainly pointed, in closed forums, to the possibility of "flexible response" by NATO and the contingency of conflict with China, and an article by Sokolovskiy in 1964 cited the possibility of protracted non-nuclear war, thereby implying a new rationale for large theater forces.

14. Khrushchev never was able completely to override proponents of large theater forces. The force reductions announced in 1960 ground to a halt early in 1961, half-completed, and for a time Khrushchev's policies were apparently checked. However, another decline in military manpower during the 1962-1964 time period indicated that this check was only temporary. Although the size of theater forces was cut sharply during his regime, their capabilities for general nuclear war were considerably increased as the result of greater mechanization and the introduction of free rocket or missile nuclear and CW delivery systems.

15. On the face of it, it appears strange that Soviet marshals would continue to register great discontent with an army of at least 120 divisions backed up by a formidable array of tactical missiles and aircraft. From the Soviet marshals' point of view, however, the cuts had been drastic. Some 35 to 55 line divisions had been deactivated. Further the remaining divisions were sharply cut in size and about half were maintained at reduced or cadre strength. Combat and service support of ground forces had also been reduced. The number of operational aircraft in Tactical Aviation was halved during 1960-1961. In many circumstances, it would be difficult fully to mobilize and deploy Soviet theater forces. Nevertheless, it is apparent that they still represent a formidable capability for land warfare, despite their loss of prominence during the Khrushchev era.

Economic Factors

16. The post-1958 expansion of strategic attack and air defense capabilities, as well as the intensification of efforts on military R&D and space, led to a marked increase in total defense expenditures.² This increase would have been

² The question of defense expenditures for 1964 is currently under study, and a Memorandum to Holders of this estimate, covering this subject, will be published when this analysis is completed.

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even greater except for the substantial reduction in military manpower—on the order of three-quarter million men between 1958 and 1964. These new programs contributed to the slowdown in the growth of the Soviet economy over the past few years, principally because their impact was greatest in areas requiring specialized skills, equipment, and resources critically needed for other important economic objectives.

17. After 1962, to relieve the increasingly acute strains in the Soviet economy, Khrushchev began again to press for changes to resource allocation. He accompanied this by efforts in the field of foreign policy, resuming the tactics of detente, highlighted by the limited nuclear test ban. In discussing the next long-term plan, just before he fell, he referred to Soviet military forces as being "at their proper level." A leveling off in military spending brought apparent curtailments or slowdowns in a number of military programs. Meanwhile, the marshals, while refraining from direct attacks on the ceilings imposed by the total military budget, argued for military doctrines and force structures not achievable under those ceilings. The evidence suggests that this problem and these conflicts remained unresolved when Khrushchev left the Soviet leadership in October 1964. They will almost certainly continue to play an important role in the formulation of policy under the new leaders.

II. POST-KHRUSHCHEV DEVELOPMENTS IN MILITARY POLICY

18. The military evidently played no active role in the removal of Khrushchev, although some military leaders were presumably consulted and assurances of their neutrality and of their backing if necessary were secured. The price, if any, for these assurances was probably not high. In any event, since the ouster there have been no indications of any general alteration of Khrushchev's military policy; indeed, an early action of the new leadership in this sphere was to announce a slight reduction in the overt military budget.

19. After a few months of silence, the military press began in 1965 to carry a series of articles by prominent officers. These articles all profess obedience to party control of the military, but seize on the concept of collectivity, currently stressed by the political leadership for other reasons, to assert the importance of professional military advice. They also turn to special use the anti-Khrushchev epithets of "bragging," "hare-brained scheming," and "subjectivism." These formulations appear to be aimed, in the military context, against reliance upon a single weapon system for deterrence as opposed to forces capable of dealing with all contingencies should deterrence fail. In these articles, the concepts of ultra-conservative marshals came in for sharp criticism, and there was no reference to "multi-million man armies." One prominent theme has been the need to approach military problems in a comprehensive and scientific way, eschewing partial solutions which leave unsolved or even aggravate other problems. While the argument is obscure, these articles suggest a willingness to abandon earlier extreme positions, and call for the further development of many types of forces against a variety of military contingencies.

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20. Thus far the military spokesmen do not appear to be championing a particular view of doctrine, force structure, or resource allocation. It appears that, in their view, the first order of business for the military is to reassert itself in the formation of Soviet military doctrines and policies and thus be able to establish a rationale for force structuring. Such steps, however, are probably but a prelude to basic arguments about resource allocations in general, and it is no accident that military spokesmen have become vocal as the Five-Year-Plan for 1966-1970 is being formulated. The new Soviet leaders will continue to apply economic restraints to the expansion of military programs.

III. FACTORS AFFECTING FUTURE POLICIES AND FORCE LEVELS

21. Our view of the future course of Soviet military affairs has always been based in large part upon an evaluation of a large number of political, economic, and strategic factors. The complexity of relationships among these factors has been markedly increased by the recent change of Soviet leadership and the prospect of a struggle for power.

Internal Politics

22. We cannot rule out the possibility of sudden political changes in the Soviet Union, including changes in the relations between the party and the military and in the concepts which guide military policy. The present situation of divided leadership makes it likely that there will be a struggle for supreme power among the various leaders, and one of the issues in this struggle may be that of military policy. As a relatively cohesive force among the elements which make up the Soviet elite, the officer corps of the Soviet armed forces could constitute either a strong support or a potential threat to existing leaders. It may occur to one man or another (as it did to Khrushchev in 1955) to make a bid for power with military support. How the military would greet such a proposal is by no means certain; many leading military figures would almost certainly fear too close an involvement in political struggles. On the whole, it seems to us more likely that in any struggle for power the military would confine themselves to their traditional role of supporting the aspirations of that political leader who least threatened their privileged position in Soviet society, or who promised to pay greater attention to their opinion in the decision-making process.

23. The marshals may believe that collective leadership will better serve their interests than would the rule of any one man. The basically conservative Soviet military establishment may see in the collective arrangement opportunities to press its views with more chance of success than it would have against a single ruler, especially if that ruler had some of the predilections of Khrushchev.

24. Over the next six years, there will almost certainly be a wholesale retirement of the aging top leadership of the Soviet military establishment. A new generation of marshals, admirals, and generals may take quite different views from those currently expressed by the military on a broad range of subjects.

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Economic Requirements

25. Given the uncertainties in our estimates of civilian economic developments and of the size and composition of the defense program, conclusions about the burden on the economy of defense expenditures can be stated only in general terms. Probable Soviet military and space programs through 1970 foreshadow an increase in the requirement for highly skilled engineers and scientists, complex machinery, and high-cost materials. Even if defense spending were to increase by 20 percent during the period of the estimate, the Soviet economy could shoulder this burden and at the same time gradually improve the equipment and technology of Soviet industry and the standard of living. If, on the other hand, defense spending were to decrease somewhat, the absolute requirement for these scarce resources would still be little different from what it was in 1964, but the strain on the civil economy would be eased because of the increasing supply of these resources.

26. In any case, we anticipate that military programs will be increasingly subjected to critical examination in terms of their cost and their effectiveness; not the least of the factors considered will be an assessment of Western military strategy and capabilities. In early Soviet weapons programs (i.e., the first ICBM, the first SAM, and the first missile submarine), the Soviets apparently paid scant attention to consideration of cost and effectiveness or to the life expectancy of the system in view of Western technological advances. In this period they almost certainly felt impelled by the exigencies of their strategic position to capitalize on early technology at whatever cost. But this type of pressure has diminished, while the cost of modern armaments has risen.

27. It is still too early to tell what effect, if any, the new agricultural investment program, announced by Brezhnev on 24 March 1965, will have on military spending. It is clear that the plan for investment in agriculture (71 billion rubles in the next five years) will require resources which can be provided only by reducing the growth of budgetary allocations to other priority claimants from past rates. While Brezhnev did not specify the claimants whose budgets would be "adjusted" to provide agriculture with its added rubles, some reduction in the rate of growth of previously favored components of heavy industry seems probable. Also, while the types of inputs needed to boost agriculture would not seem to require a cut in projected military research and development outlays, it is possible that certain hardware procurement schedules will be adjusted downward. Barring important changes in the international situation, however, and in view of the apparent outlook of the current leadership, major changes in Soviet defense spending in either direction seem unlikely.

Manpower

28. During the period of this estimate, the nature of Soviet military manpower problems will be fundamentally changed. Problems of quantity, caused by the low birth rates of World War II, are being replaced by problems of quality.

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The sophistication of equipment in all types of forces will demand an increasing degree of professionalism in all ranks which may prove incompatible with the conscription system now in effect, as well as competitive with increasing demands for high skill in the civil economy. Whatever the Soviet solution to this problem, the cost per man of the military establishment is likely to increase substantially.

Research and Development

29. Over the past several years, the Soviet R&D effort has continued to grow. Our evidence indicates large-scale and continuing efforts in all major categories of military R&D: ballistic missiles, ABMs, certain space programs, nuclear submarines, ASW, aircraft, nuclear weapons, and CW. Further, we see continued efforts of considerable magnitude on the scientific fronts supporting military requirements, such as computer technology, meteorology, oceanography, geophysics, and electronics. The quality of this evidence varies considerably. In general, however, we have virtually no information on the laboratory and design phase of the military R&D cycle; operational testing usually provides the earliest indication that a major new weapon system is under development. Thus, new systems of which we have no knowledge could now be in early stages of development.

30. The Soviets will continue to press their dynamic military and space R&D programs. Soviet security considerations demand vigorous efforts to prevent a Western military technological advantage which might threaten the credibility of their deterrent. Beyond this, we believe that the Soviet R&D effort represents an attempt to achieve major technological advances in the hope of offsetting present Western strategic advantages.

31. Should the Soviets achieve a technological advance which offered the prospect of significant improvement in military capabilities, the Soviet leaders would certainly seek to exploit such an advance to gain political and military advantage, and they would undoubtedly consider increasing their military expenditures if effective exploitation seemed to require it. But their decisions as to deployment would involve a weighing of economic considerations and of US capabilities to counter against the politico-military gains to be achieved.

32. The USSR's space program has become a key element in Soviet world prestige. Space remains the major area in which the Soviets can still propound a creditable claim to world primacy. There have been tenuous indications that the costly Soviet space program may be subjected to more critical scrutiny by the new Soviet leadership. For political reasons, however, the Soviets could ill afford to slacken in the space race, and from all indications they have no intention of doing so. We believe that the Soviet space program will retain its priority, that its accomplishments will continue to be impressive, and that it will focus on goals for which the USSR can most favorably compete.

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Changes in Alliance Systems

33. Over the next five years, important changes will probably occur in the military situation around the Soviet periphery. In Western Europe, France's acquisition of an independent capability for strategic nuclear attack will pose an additional contingency to Soviet thinking. The possibility that West Germany may acquire nuclear weapons in some way is of great concern to the USSR. In Eastern Europe, if present trends toward autonomy continue, the Warsaw Pact will become more a conventional military alliance, less a westward extension of Soviet forces. In Asia, the hardening of the Sino-Soviet dispute will probably force the USSR to recognize the military implications of China's hostility and ambitions.

34. These prospective developments, cutting across familiar concepts of a bipolar world organized into two cohesive rival camps, have military as well as political implications. With respect to China, the Soviets will count their overwhelming strategic superiority as an underlying advantage, but they will probably nevertheless anticipate security problems to which a nuclear response would be wholly inappropriate. We therefore think that the USSR will strengthen conventional forces in Soviet Asia. As for Western Europe, the Soviet leaders will almost certainly calculate that forces and doctrines developed to cope with NATO will suffice to meet lesser threats arising from France and West Germany. But the Soviets would consider their military problem to be sharply altered by any important changes in the political cohesion or military effectiveness of NATO.

35. The USSR has in recent years strengthened the forces of its East European allies, indicating that the Soviets rely on these forces at least for the defense of their own territories. But as autonomy spreads in Eastern Europe, the range of contingencies in which the USSR can rely on effective military support from its Warsaw Pact allies will narrow. We believe that the Soviet leaders already recognize this trend and question the utility of East European forces for conflicts in which individual national interests do not coincide with those of the USSR. This may require the Soviets to re-examine their concept of a rapid offensive sweep through Western Europe, at least to the extent that they had depended on the Satellite forces for supporting action.

US Military Capabilities

36. The Soviets will continue to weigh the adequacy of most current military programs primarily against US capabilities, and to judge the desirability of proposed programs against probable US reaction. For example, in weighing the pros and cons of ABM deployment, the Soviets have almost certainly considered probable US future developments in penetration aids. Soviet military doctrine, force structure, and weapons programs will be adjusted to reflect significant changes in estimates of US capabilities and could change sharply in the event of unexpected developments in US military policy or capabilities.

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DISCUSSION

I. INTRODUCTION

1. Today, as for the past several years, the major problems of Soviet military policy concern the US, Europe, and China. The great bulk of the Soviet military effort has been directed to meeting the military challenge from these areas. Elsewhere in the world the USSR's military problems stem primarily from the use of military power and resources in support of Soviet foreign policy. Such problems have increased in number and importance as the USSR has become involved in new areas and its commitments have grown.

2. Even before the Czech crisis, the improved strategic relationship with the US, the restiveness of Eastern Europe, the unremitting hostility of China, the June war in the Middle East, and the prolonged conflict in Vietnam had raised new questions of priorities and requirements both within the Soviet military establishment and between the USSR and its allies. And the competition between civilian and military demands on national resources promised to sharpen as both military costs and consumer expectations rose. In this situation the Soviet leaders apparently were conducting a searching review of the military policies of the past few years and exploring options for the future.

3. The Czech crisis has raised no entirely new military problems for the USSR, but it has exacerbated old ones. Long concerned with the restiveness of its East European allies, the USSR, for political as well as military reasons, has sought to strengthen the Warsaw Pact; now the Pact is in some disarray and the Soviet leaders must entertain new doubts about the reliability of East European forces, particularly the Czech forces. The intervention has aroused new apprehensions within NATO and has probably arrested the decline in NATO military efforts, at least for a time. These considerations are relevant to future Soviet decisions concerning general purpose forces—decisions which will be greatly influenced by the course of events in Eastern Europe over the coming months. In the strategic weapons field, the Soviet leaders had, after considerable delay, agreed to discuss arms control with the US. But the Czech invasion has soured US-Soviet relations and put new obstacles in the way of a possible arms control agreement.

II. INTERNAL FACTORS AFFECTING MILITARY POLICY

Political-Military Relations

4. Soviet military policy is in part a product of Kremlin politics, which, like politics elsewhere, involves questions of power—who makes the decisions—and of priorities—what decisions should be made. Under conditions of collective leadership, however, the decision-making process is complicated by the fact that nothing of consequence can be decided until it has been collec-

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tively scrutinized and weighed against the individual interests of the political leaders. This diffusion of authority has not prevented the leadership from dealing effectively with a wide range of problems, but it has tended to inhibit or delay initiative in defense matters.

5. This situation has had an important bearing on the relative weight of the military voice in Soviet councils. Not only has the political leadership seemed more responsive to special interest arguments, but at times the absence of clear signals from the top has given greater influence in the decision-making process to military and civilian advocates of improved military forces. Although the military itself has periodically shown signs of interservice rivalries over resource priorities and future force structuring, it has nonetheless been united in making its claims for continued preferential treatment in the allocation of resources. The increases in the military budget of the past few years indicate, moreover, that the vigor with which the military has presented its arguments has not gone unrewarded. The military has exploited and benefited from the resurgence of a more suspicious and fundamentalist Communist outlook that has occurred under the present collective leadership.

6. Trends in Soviet military doctrine have been generally consistent with the improvement in the fortunes of the military under the collective leadership. The role of the conventional forces as an instrument of national policy has been emphasized, but the Soviets have continued to stress the primacy of the strategic forces as the ultimate recourse in war. We believe that this relatively harmonious approach to military requirements reflected the general satisfaction of the military with the policy pursued by the new leadership.

7. Even before the Czech crisis, however, there were issues of military policy that promised to introduce new tensions into political-military relations. There is no persuasive evidence that the military played a decisive role in the very hard political-military decisions involved in the intervention in Czechoslovakia, or that their views came down on one or another side of the choices posed. They will, however, be much concerned with the implications of the new situation created by the Czech events for Soviet military posture and plans. Issues affecting the future of the Warsaw Pact, Soviet deployments in Central Europe, and even the pace of the strategic arms race will complicate the military's dealings with the political leadership for some time.

Economic Considerations

8. We believe that the perennial problem of resource allocation is likely to become a sharper issue in the making of Soviet military policy. In Khrushchev's last years Soviet military expenditures were temporarily stabilized, due in part to a pause in strategic weapon deployment and in part to his efforts to economize. Under the new leadership, however, they have continued to rise, primarily as the result of increased outlays for strategic weapons and for research and development (R&D). The increase has not outpaced the overall growth of the economy, but the requirements of these programs for scarce high-quality

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resources of the sort needed to sustain economic growth have aggravated the impact of defense spending.

9. We estimate current Soviet expenditures for military and space programs at about 20 billion rubles—the equivalent of about \$60 billion. Of this total, we believe that nearly 30 percent goes to the strategic attack and strategic defense forces combined, over 25 percent to the general purpose forces, 15 percent to command and general support, and 30 percent to military R&D and the space program. The distribution of expenditures for the Soviet military has changed substantially over the past several years, reflecting the pattern of priorities. The most pronounced change has occurred in expenditures for R&D and space, which in 1960 accounted for only 15 percent of the total. In the same year, expenditures for general purpose forces amounted to about 35 percent of the total.

10. Soviet criticism of the high level of arms expenditures in the US, which Kosygin termed "catastrophic," almost certainly reflected the leadership's concern over rising military costs in the USSR. The Soviet military leaders have undoubtedly pointed to the US military effort in pressing their claims for increased outlays for defense. And articles in the Soviet military press justifying such outlays and stressing the importance of heavy industry suggested that the "military-industrial complex" in the USSR saw a threat to its favored position. The immediate effect of the Czech crisis will be to strengthen the position of these elements.

11. In the past, the strategic forces have led in the competition for resources between the military establishment and the civilian economy. The Soviet leaders may have hoped that when certain strategic programs reached planned levels they could divert some of these resources to other uses—to the civilian economy, or perhaps to the relatively neglected general purpose forces. We believe that economic considerations weighed heavily in their decision to discuss arms control with the US. Any such calculations, however, probably have been upset by the Czech crisis, which almost certainly will lead to pressures for increases in the theater forces in excess of previous plans, and would weigh against cuts in other military spending. Thus an intensification of competition is likely not only between civilian and military programs, but also within the military establishment.

12. For the near term, at least, Soviet military expenditures almost certainly will continue to rise. New requirements for theater forces could not be met by reductions in outlays for other forces, even if the Soviets should seek to do so, and we doubt that they would in the present situation. Resources allocated to strategic programs are not readily transferrable. Nevertheless, the impact of the larger military effort on the economy will probably impel Soviet leaders to search for savings in military programs. It is possible that it will add to the incentives that led the USSR to agree to discuss strategic arms control with the US.

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III. THE STRATEGIC RELATIONSHIP WITH THE US

13. Despite Moscow's immediate concern over its position in Eastern Europe, the most important issues of Soviet military policy relate to the strategic balance between the US and the USSR. The goals of Soviet strategic weapons programs were set at a time when the US enjoyed such a superiority in intercontinental delivery systems as to put the USSR at a political and psychological disadvantage. The aim of Soviet strategic policy, therefore, has been to achieve a more formidable deterrent and to narrow and eventually to overcome the US lead. Toward this end the Soviets have built strategic forces which provide a large assured destruction capability and important damage-limiting capabilities as well.

14. The Soviets evidently attach great importance to the attainment of strategic parity with the US, but we do not know how they define it. If they seek parity in numbers of intercontinental delivery vehicles, it is clear that they have not reached it. By 1970, their intercontinental ballistic missile (ICBM) force will probably surpass the US force in numbers of launchers, but the Soviets will remain inferior in submarine-launched ballistic missiles (SLBMs) and heavy bombers. At present construction rates, they could match the US Polaris force by 1975, but their heavy bomber force will probably decline.¹ We believe, however, that in assessing the strategic balance the Soviets would go beyond numbers to consider qualitative differences in weapon systems such as warhead yield, the target system to be attacked, and damage-limiting capabilities. Viewed in this light, the Soviets may consider their capabilities for intercontinental attack roughly comparable to those of the US.

15. The Soviet concept of strategic forces differs from that of the US, which focuses upon intercontinental delivery systems. We believe that in the USSR the strategic mission is assigned to the Strategic Rocket Forces, Long Range Aviation, and ballistic missile submarines. All of these forces include elements—medium-range ballistic missiles (MRBMs), intermediate-range ballistic missiles (IRBMs), medium bombers,² and diesel-powered submarines—which we believe are intended primarily for use in Eurasian operations. The US has no MRBMs or IRBMs and has virtually eliminated its medium bomber force. Moreover, the US has no counterpart to the Soviet submarine-launched cruise missiles, which, in addition to their primary antishipping role, also have the capability for use against land targets. If the Soviets include medium range as well as intercontinental delivery systems in their assessment of the strategic balance, they could conclude that the USSR had attained strategic parity with the US, or even superiority.

¹ Maj. Gen. Jack E. Thomas, the Assistant Chief of Staff, Intelligence, USAF, does not believe there will be any appreciable change in the size of the Soviet heavy bomber force during the period of this estimate. For his view see the forthcoming NIE 11-8-68, "Soviet Strategic Attack Forces."

² Maj. Gen. Jack E. Thomas, the Assistant Chief of Staff, Intelligence, USAF, continues to believe the Soviet medium bomber force has an intercontinental mission. For his views see NIE 11-8-68.

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16. Recent statements by Soviet leaders have in fact, laid claim to strategic parity or superiority for the USSR. In announcing Soviet acceptance of arms control talks, Gromyko described Soviet military power relative to that of the US as being "by no means lesser." A few days later, Brezhnev declared that the US planned "to try to achieve strategic superiority over the Soviet Union." These statements were undoubtedly intended to justify the Soviet decision to enter into arms control negotiations, but they may also reflect the USSR's appraisal of its present strategic position.

The Arms Control Talks

17. The timing of the belated Soviet acceptance of the US proposal for arms control talks raises questions of the USSR's motives. It would appear to run counter to repeated Soviet statements that any significant improvement in US-Soviet relations was impossible in the context of the Vietnam war. And it came only six months before a change of administration in Washington which could lead to changes in US arms control policy. Its timing, however, was probably dictated by a number of factors, political and military. The Soviets probably reasoned that the political climate had been changed by the initiation of negotiations between the US and North Vietnam, and they may have hoped to influence the US position in Paris. The delay in the Soviet response also permitted a considerable build-up in the Soviet ICBM force, thus strengthening the Soviet position at the conference table. And, finally, debate within the Soviet regime may have contributed to the delay.

18. The economic considerations contributing to the Soviet decision are probably no more compelling than the strategic considerations. Military arguments for strategic arms control in the USSR probably center around the present strategic situation, the most favorable to the USSR in the postwar period. Considering US plans for improvements in its strategic forces—antiballistic missile (ABM), Minuteman III, and Poseidon—the Soviets probably believe that a considerable sustained effort would be necessary to maintain the relative position they have now achieved. They may also be concerned lest the end of the Vietnam war enable the US to divert additional resources to its strategic forces. Finally, they may reason that further increments to their strategic forces would have little effect on the relationship between the US and the USSR so long as the US maintained its large, second-strike assured destruction capability. If these arguments were to prevail in the USSR, the Soviets would probably seek an agreement that preserved their present strategic relationship with the US.

19. It is too early to assess the full implications of the Czech crisis for Soviet policy toward arms control. The Soviets still have the same basic economic and military incentives; indeed, it is possible that the new military requirements generated by the Czech crisis have added to those incentives. Moreover, the present Soviet line seems to be that the Czech crisis is an internal Communist Bloc affair that should have no effect on the USSR's relations with the West. It is possible, therefore, that the Soviets will seek to proceed with arms control talks. At a minimum, however, the Czech crisis has delayed the opening of

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talks with the US and has dampened the prospects of any real progress toward arms control in the near term.

20. Nevertheless, we believe that the Soviet Government is still interested in some form of strategic arms control for both economic and military reasons. We cannot estimate, however, whether the USSR will actually accede to an arms control agreement, or, until the ultimate Soviet position is known, whether an agreement is possible. Moreover, the pressures against such an agreement within the Soviet system would be formidable. The Soviet Government's decision to negotiate was probably contested, and its opponents probably still hope to reverse it, and to continue the longstanding pattern of increases in Soviet strategic forces.

21. In any case, the Soviet leaders cannot base their strategic planning on the possibility of strategic arms control and will almost certainly explore other alternatives. They might consider a policy of minimum deterrence aimed only at maintaining a large assured destruction capability, or they might consider a try for strategic superiority of such an order that it could be translated into significant political gain. We consider it highly unlikely that the Soviets would select either of these courses of action. The first, that of unilateral deescalation, would involve a decision to sacrifice the hard-won gains of recent years. The second would involve economic sacrifices that are probably unacceptable to the present leadership and would almost certainly provoke a strong US reaction. We believe, therefore, that in the absence of a strategic arms control agreement the USSR will continue the arms competition with the US with the object of maintaining and if possible improving its relative strategic position.

Trends in Strategic Forces

22. The future size and composition of Soviet forces for intercontinental attack will depend not only on Soviet initiatives, but also upon developments on the US side, in particular upon US deployment of MIRVs and ABMs, and on the terms of any arms control agreement. The Soviet response will probably be both quantitative and qualitative. The intercontinental striking forces will probably include an ICBM force with at least as many launchers as those now programmed for the US, a force of nuclear-powered ballistic missile submarines comparable to the US Polaris fleet, and a heavy bomber force significantly smaller than that of the US. We also estimate an increased emphasis on qualitative improvements, particularly those related to survivability and capacity to penetrate enemy defenses.³

23. Closely related to the question of force goals for strategic attack forces is the adequacy of strategic defenses. For a number of years, the Soviets have given equal priority to both. They have built air defenses which have a formidable capability against aircraft attacking at medium and high altitudes. They are currently deploying on a large scale a new long-range surface-to-air

³ Detailed estimates of Soviet strategic forces appear in the forthcoming NIE 11-8-68.

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missile (SAM) system which will greatly improve their capabilities against high-flying, supersonic aircraft and standoff weapons. They do not yet have adequate defense against strategic attack at very low altitudes.

24. In 1962 the Soviets began to deploy around Moscow an ABM system which was then still under development. Deployment is continuing and the first elements of the system will probably become operational this year. Changes in construction activity around Moscow suggest that the Soviets do not consider this system satisfactory, and they almost certainly will not deploy it elsewhere. Dissatisfaction with this system was probably one consideration behind the Soviets' decision to enter arms control talks. As soon as an improved system is available, the Soviets will probably deploy ABMs in defense of other areas, but their numbers may be restricted by an arms control agreement. We doubt that such a system could be brought into service before the early 1970's.⁴

25. *Strategic Policy Under Arms Control.* As noted above, we believe that Soviet interest in strategic arms control stems primarily from a desire to stabilize the present strategic situation of mutual deterrence and to conserve resources that would otherwise be consumed by strategic weapon programs. The Soviets are most unlikely to accede to an agreement that would limit their strategic options without securing these objectives.

26. Soviet strategic policy in an arms control environment can be forecast only in the most general way. Whatever the terms of an agreement, the development of Soviet strategic forces would not come to a standstill. The Soviets would almost certainly continue a strong R&D effort with the objectives of improving their strategic forces and of hedging against a possible abrogation of the treaty. They would also make qualitative improvements to their forces in the field, aimed at maintaining their assured destruction capability and improving their damage-limiting capabilities. But if, as we believe, economic considerations had played a large part in a decision to accept arms control, there would probably be some reduction in Soviet expenditures for strategic forces, or at least a leveling out.

IV. MILITARY PROBLEMS IN EUROPE AND THE FAR EAST

27. The major part of the Soviet military establishment consists of forces, strategic and general purpose, which are equipped and deployed for operations on the USSR's periphery. Most of these forces are concentrated in the West, but the traditional European orientation of Soviet military policy has undergone some modification in the past few years as the Soviets have sent strong reinforcements to the Chinese border area. Now the Soviets face a changed political and

⁴ Lt. Gen. Joseph F. Carroll, the Director, Defense Intelligence Agency, Maj. Gen. Jack E. Thomas, the Assistant Chief of Staff, Intelligence, USAF, and Brig. Gen. Vasco J. Fenili, the Acting Assistant Chief of Staff for Intelligence, Department of the Army, believe that this paragraph unduly ignores the possibility that the SA-5 may possess an ABM capability. The question will be discussed in detail in the forthcoming NIE 11-3-68, "Soviet Strategic Air and Missile Defenses."

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SOVIET CAPABILITIES FOR LONG RANGE ATTACK

**APPROVED FOR RELEASE
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THE PROBLEM

To estimate probable trends in the strength and deployment of Soviet weapon systems suitable for long range attack, and in Soviet capabilities for such attack, projecting forward for about five years.¹

CONCLUSIONS

1. Major new developments are evident in Soviet programs for long range striking forces. First, as forces for attack on Eurasia are reaching planned levels, greater emphasis is being placed on forces for intercontinental attack, especially ICBMs. Second, the Soviets are attempting to improve their capabilities for both preemptive and retaliatory action, by measures designed to shorten reaction times and increase survivability.

2. The tempo of the ICBM program has quickened. The present relatively modest force level of about 50 operational launchers will probably grow substantially, reaching some

¹The weapon systems considered are ground-launched missiles with ranges of 700 nautical miles (n.m.) or more, submarine-launched missiles, heavy and medium bombers, air-to-surface missiles, and advanced delivery and supporting systems such as orbital and suborbital vehicles. Emphasis is placed on those systems designed primarily to attack land targets in North America, and in Eurasia and its periphery.

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125-175 launchers in mid-1963 and 200-300 in mid-1964.^{2, 3} From 1963 onwards, an increasing proportion of the ICBM force will probably be deployed at launch sites having some degree of hardening.

3. The USSR is developing a submerged-launch ballistic missile submarine system, with medium or intermediate range missiles. This improved system will probably be incorporated into some portion of the 40 or so existing ballistic missile submarines, and into a new submarine class. Soviet submarines armed with cruise-type missiles are also capable of attacking land targets. Within the next few years, Soviet nuclear-powered missile submarines will probably be conducting regular patrols within firing range of the US.

4. For employment against Eurasia, the Soviets have built formidable missile and bomber forces, which they will continue to maintain and improve. Their limited bomber capability against North America will be tailored increasingly to conduct missions supplementary to ballistic missile attack.

5. The weight of nuclear attack which the USSR could launch will increase with the growth of long range striking forces and a general upward trend in weapon yields. Within the next few years, limited numbers of very high yield weapons in the 25-100 megaton range will be available for delivery by bombers and probably ICBMs. Ground-launched missile units are believed to have more than one missile per launcher, to provide a refire capability.

6. In the mid-1960's, the principal Soviet forces for attack on North America will be increasing numbers of ICBM launchers, supplemented by increasing numbers of nuclear-powered missile submarines and decreasing numbers of bombers. In a preemptive attack at that time, the USSR would be able to strike at the fixed bases of an important segment of the US nuclear delivery capability. Moreover,

²The Assistant Chief of Staff for Intelligence, Department of the Army, believes that the number of Soviet ICBM launchers is unlikely to exceed the low side of the ranges shown for mid-1963 and mid-1964.

³The Assistant Chief of Staff, Intelligence, USAF, estimates the number of operational launchers as follows: mid-1962, 75-100; mid-1963, 175-250; and mid-1964, 300-450.

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it would have some prospect that a portion of its own long range striking forces could survive an initial US attack and go on to retaliate.

7. With the long range striking forces we estimate it will have in the mid-1960's, however, the USSR could not expect to destroy the hardened, airborne, seaborne, and fast reaction nuclear delivery capabilities of the US.

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DISCUSSION

SOVIET POLICY TOWARD LONG RANGE STRIKING FORCES

8. The Soviets regard forces for long range attack as essential for supporting an aggressive political posture, deterring the West from resort to military action, and fighting a war as effectively as possible should one occur. In our view, they are building forces which they regard as appropriate to these objectives rather than attempting to achieve the very high degree of superiority required to launch a deliberate attack on the West. Efforts to gear their forces better for both preemptive and retaliatory operations, along with greater emphasis upon forces capable of attacking the US, are the major new developments in the Soviet programs for long range striking forces.

9. In building these forces, the Soviets put initial stress on creating a massive capability against Eurasia and its periphery. Intercontinental capabilities were not neglected, but deployment of medium range delivery systems occurred earlier and in much larger numbers. This pattern is probably changing. We believe that deployment of medium range systems is approaching the planned level, and that major emphasis is now being given to further development of forces for intercontinental attack, primarily ICBMs.

MAJOR WEAPON PROGRAMS, 1962-1964

Intercontinental Ballistic Missiles

10. The tempo of ICBM development and deployment has quickened noticeably in the past year or two. While present force levels are relatively modest, there is good evidence that the Soviets have been conducting high priority R&D on new ICBM systems, with con-

current construction of deployment complexes. Moreover, the Soviets are probably building new sites with some degree of hardening.

11. *Development and Deployment.* During the past 18 months, activity on the Soviet ICBM test range has intensified, with firings of three different types of ICBMs. The most urgent recent program at Tyuratam has been the development of the second generation SS-7 ICBM system, which is now being deployed. Testing of the SS-8 ICBM has proceeded at a slower pace; it could be available for operational use in 1963. Firings of the first generation SS-6 ICBM, which probably became operational in 1960, have been at a reduced pace. We believe that within the next year or so the Soviets will begin firing new ICBMs or space vehicles which are as yet unknown to US intelligence.

12. The urgency apparent in the development of the second generation ICBM almost certainly relates to a Soviet decision to deploy the first generation system in only limited numbers. The SS-6 ICBM is a very large vehicle of nearly half a million pounds gross takeoff weight, with nonstorable liquid propellants and radio-inertial guidance. Ground control and support facilities are correspondingly large and include rail service direct to launchers. The second generation SS-7 ICBM is simpler and considerably less bulky, and probably employs storable liquid propellants and all-inertial guidance. A typical SS-7 complex consists of a rail-served support area and eight or more launchers, which are deployed in pairs and are road-served.

13. *Probable Hardening.* All currently operational Soviet launchers are deployed at soft, fixed sites, but we believe the Soviets have

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probably initiated a program to construct launch sites having some degree of hardening. Considering past Soviet practices, we estimate that there will be two ICBM launchers at each site. The first of these new sites will probably be operational in early 1963. It is probable that such sites are to employ either the SS-7 ICBM with redesigned ground support equipment or the SS-8 ICBM. Our information on the SS-8 system is inadequate to determine whether the missile employed is even larger than the SS-6 or whether it is smaller than the SS-7.

14. *Estimated Force Levels to 1964.* The ICBM force will increase substantially above its present level in the next year or so. Our estimate of the growth of the force in this period is affected, on the one hand, by the increasing tempo of the Soviet program, and on the other hand, by the greater time and effort required to build hardened launch sites. Considering these factors, together with all the other evidence available to us, we estimate as follows the size and composition of the ICBM force to 1964:

	1962-1964		
	Mid-1962	Mid-1963	Mid-1964
Soft 1st Generation (SS-6)	6-10	6-10	6-10
Soft 1st Generation (SS-7)	40-45	110-140	150-200
Hardened		10-25	50-100
Approximate Total	50	125-175	200-300

*The Assistant Chief of Staff for Intelligence, Department of the Army, believes that the number of Soviet ICBM launchers is unlikely to exceed the low side of the ranges shown for mid-1963 and mid-1964.

*The Assistant Chief of Staff, Intelligence, USAF, estimates about 75-100 operational ICBM launchers in mid-1962. He would estimate the force levels through 1964 as follows:

	TOTAL LAUNCHERS		
	Mid-1962	Mid-1963	Mid-1964
SS-6	10-25	10-25	
SS-7	65-75	145-185	250-300
Hardened		20-40	50-150
Total	75-100	175-250	300-450

Medium and Intermediate Range Ballistic Missiles

15. MRBM and IRBM sites, each with four pads, are soft, fixed, and road-served. More than 90 percent are deployed in a broad belt of Western USSR stretching from the Baltic to the Black Sea, within range of NATO targets in Norway, most of Western Europe, and Turkey. A lesser concentration of sites in the Soviet Far East is capable of bringing Japan, Korea, and Okinawa under fire. A few sites in south central USSR are within range of US and Allied military installations in Turkey and Pakistan. IRBMs could extend the target coverage from these various areas to include all of Spain, North Africa, Taiwan, and the northern Philippines.

16. We estimate that the USSR now has about 500 operational MRBM and IRBM launch pads. We do not have evidence that all of these launch pads are manned, and it is possible that some of them represent alternate firing positions. The site construction program has probably slowed but not ceased. The force will probably grow over the next year or two to a total of about 550-650 launch pads (including some 50-100 IRBMs), after which it will probably level off.

Operational Procedures of Missile Units

17. ICBM, IRBM, and MRBM units are believed to have refire capabilities. Although the evidence is not firm, we believe that an average of two missiles is provided for each launch pad. Preparation to fire initial and subsequent salvos probably requires a number of hours. Sophisticated methods of attaining a high degree of simultaneity and flexibility in operations are not believed to be employed. The USSR is working to reduce the reaction and refire times of strategic missile units, but current system designs will preclude the constant maintenance of readiness conditions approaching those of US systems.

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Submarine-Launched Missiles

18. The Soviets now have operational about 40 long range ballistic missile submarines, including 7 diesel-powered "Z" class, 25 diesel-powered "G" class, and 10 nuclear-powered "H" class submarines. This force carries a total of about 120 ballistic missiles with ranges up to 350 n.m. The effectiveness of these submarines is limited by the small number of missiles each carries, the short range of the missiles, and the requirement for submarines to surface for launching. There is reliable evidence, however, that the Soviets are now developing a capability to launch ballistic missiles from submerged submarines. The range of the missiles may be either 650 or 2,000 n.m. A program to retrofit some portion of the existing force of about 35 "G" and "H" class submarines will probably begin soon. All of these submarines could be so equipped within the next two to four years. A new nuclear-powered submarine class is probably also under development to employ this new missile system; we estimate that the first such submarine could become operational in 1963-1964. The probable numbers of ballistic missile submarines in Soviet operational units through mid-1964 are estimated as follows:

SOVIET BALLISTIC MISSILE SUBMARINES, 1962-1964			
	Mid-1962	Mid-1963	Mid-1964
Diesel-powered	32	32-35	32-35
Nuclear-powered	10	12-15	15-20

19. The Soviet Navy has also developed 350 n.m. submarine-launched cruise missile systems, designed primarily for low altitude, supersonic attack against Western surface ships, particularly carrier task forces. They are now carried by a few converted diesel-powered submarines and at least four nuclear-powered submarines. We believe that the Soviets are now extending their capability to attack land targets with missiles of this type.

Long Range Aviation

20. Soviet Long Range Aviation, by reason of its equipment, basing, and deployment, is much better suited to Eurasian operations than to intercontinental attack. We estimate that as of mid-1962 Long Range Aviation comprises some 165 heavy bombers and 950 jet medium bombers.⁶ Virtually all of the medium bombers are BADGERS, but a few supersonic BLINDERS have probably now been delivered to units. It is unlikely that a new heavy bomber will be developed for operational use.⁷ Recent trends indicate little change in total aircraft strength over the next two years.

ESTIMATED STRENGTH OF LONG RANGE AVIATION, 1962-1964

BOMBERS AND TANKERS	Mid-1962	Mid-1963	Mid-1964
Heavy			
BISON	110	110	100
BEAR	55	55	50
Total	165	165	150
Medium			
BADGER	950	900	800
BLINDER	a few	50	100
Total	950	950	900

⁶The Assistant Chief of Staff, Intelligence, USAF, believes that the heavy bomber force will have the composition included in the following table:

BOMBERS AND TANKERS	Mid-1962	Mid-1963	Mid-1964
Heavy			
BISON	120	120	115
BEAR	80	80	75
Follow-on			10
Total	200	200	200

⁷The Assistant Chief of Staff, Intelligence, USAF, believes that a follow-on heavy bomber will be introduced in 1964. The continued research and development of large supersonic aircraft substantiates the Soviets' interest in large supersonic vehicles and indicates their intent to increase their strategic attack capabilities by such means.

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21. In attempting to overcome the range limitations of Long Range Aviation for inter-continental attack, the Soviets have given considerable emphasis to aerial refueling and Arctic training in BADGER and BISON units. Most of the BEARs have been modified to deliver 350 n.m. air-to-surface missiles. We believe that the Soviets might plan to commit as many as 400-500 aircraft to initial attacks on North America. Considering a variety of operational factors, but excluding combat attrition, we estimate that the Soviets could now put about 200 bombers over North America on two-way missions in initial attacks; of these nearly half could be heavy bombers. The patterns of Arctic training and base utilization indicate that aircraft would probably be staged through a few bases in successive waves over a number of hours.*

Nuclear Weapons

22. The present Soviet stockpile consists almost entirely of weapons developed from nuclear tests conducted prior to the 1961 test series. Most of the weapons allotted to Long Range Aviation are probably high-yield types ranging from about 100 KT to 8 MT. Ballistic missiles now in service could deliver warheads with maximum yields in the megaton range. MRBMs are probably also equipped with lower yield warheads. Naval cruise-type missiles and air-to-surface missiles are probably armed with warheads of low or medium yield for use against ships, but could deliver warheads in the low megaton range against land or coastal targets. The general trend in the yields of weapons allotted to long range attack will probably be upwards. A few very high-

*The Assistant Chief of Staff, Intelligence, USAF, believes that the Soviets would use a number of bases for staging and would not be restricted in their mode of attack. He further believes that the Soviets could commit about 750 aircraft to initial two-way attacks on North America. Considering operational factors and allowing for noncombat attrition, about 300 bombers could reach North American targets.

yield bombs of 25 MT, or even 100 MT, could now be available. It is possible that a few ICBMs capable of delivering these very high yield weapons could be available within the next two years.⁹

TRENDS IN LONG RANGE STRIKING FORCES, 1965-1967

23. In the middle 1960's the USSR will continue to strengthen and modernize its long range striking forces, with emphasis on those systems capable of attacking the US. The effort devoted to long range attack forces will be affected by the competing demands of other essential military and nonmilitary programs. We cannot estimate with confidence the decisions the Soviet leaders will make or the success they are likely to achieve in various weapons programs. However, we believe that while a mixed striking capability will be retained, the ICBM will be the dominant weapon.

ICBM Forces

24. The Soviet ICBM program will be influenced by a variety of factors: Soviet strategic concepts, technical improvements, other Soviet weapons programs, the nature and size of Western forces, and the international situation. These factors place broad limits on the future Soviet ICBM force but do not lead us to a particular program. For this reason we can only estimate the Soviet force level within a broad range. All things considered, we believe the Soviet force level in mid-1967 will be within the range of 300-600 operational launchers. The majority of launchers will probably have a degree of hardening, including some fully hardened. To achieve the high side of the range, the USSR would need to commit resources throughout this period at rates at least as high as those now evident in the ICBM program. Many of the launchers will probably have more than one

⁹For a detailed discussion of Soviet nuclear weapon characteristics, see NIE 11-2-62, "The Soviet Atomic Energy Program," dated 18 May 1962, TOP SECRET (Limited Distribution).

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missile available, to provide a refire capability. Our estimate, reflecting the considerable range of uncertainty in any figures for this period, is as follows:

OPERATIONAL SOVIET ICBM LAUNCHERS, 1965-1967 " " "

	Mid-1965	Mid-1966	Mid-1967
Soft	150-250	150-250	150-250
Hardened	100-175	125-250	125-250
Fully Hard	0-a few	a few-25	25-100
Approx. Total	250-425	275-525	300-600

25. The smaller force would give the Soviets high assurance in an initial attack of destroying US soft fixed nuclear bases, semihardened ICBM sites, communication and control facilities, and the principal US metropolitan areas. The larger force would provide an additional attack capability against some hardened targets, control centers, and other elements contributing to US striking and defensive strength, and would increase the Soviet retaliatory capability. We believe that the programmed buildup in US intercontinental attack forces makes it increasingly unlikely that the Soviets would judge that they could launch an attack on US nuclear forces and inflict sufficient damage to assure that resulting damage to the USSR was acceptable.

26. The accuracy, reliability, and reaction time of the ICBM force will improve. Better command, communications, and other equipment will increase its flexibility and capability for simultaneous attack. The bulk of the force will probably be equipped with warheads

" The Assistant Chief of Staff for Intelligence, Department of the Army, believes that the force level is likely to be towards the low side of the estimate presented in the table above.

" The Assistant Chief of Staff, Intelligence, USAF, believes the operational Soviet ICBM launchers for the period 1965-1967 will be as follows:

	Mid-1965	Mid-1966	Mid-1967
Soft	250-300	250-300	250-300
Hardened	150-200	150-200	150-200
Fully Hard	About 50	About 150	About 300
Total	450-550	550-650	700-800

in the [] range, but a number of [] missiles and [] missiles will probably be available. To improve the survivability of the force, the Soviets will probably continue to deploy ICBMs at launchers which are dispersed and have some degree of hardening. They will also probably develop a fully hardened system which we believe could become operational in 1965 or 1966.

MRBM and IRBM Forces

27. Soviet strength in these systems will probably have been stabilized before 1965 at approximately 550-650 operational launch pads. To improve the survivability of the MRBM force, the Soviets may also develop road mobile or hardened systems.

Submarine-Launched Forces

28. Soviet planners will probably look upon submarine missile forces as an important supplement to their ICBM strength because of their relative invulnerability and their capability for varying the direction and nature of attacks on the US. We believe that the number of nuclear-powered submarines capable of launching ballistic missiles will be on the order of 25-30 in mid-1967. The Soviets will probably also have about two dozen nuclear submarines equipped with cruise-type missiles. In addition, diesel-powered missile submarines will remain in operation. The ranges of submarine-launched missiles may be extended to as much as 2,000 n.m. for ballistic missiles, and to 650 n.m. for cruise missiles. By the mid-1960's, some Soviet nuclear-powered missile submarines will probably be conducting regular patrols within missile range of US coasts.

Bomber Forces

29. With the growth and improvement of missile capabilities, the Soviets would probably plan to employ bomber forces in follow-on attacks after initial missile strikes had been delivered or to supplement the retaliatory blow if the USSR were attacked first. Aircraft

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equipped with improved penetration aids and nuclear weapons would probably be used for increasingly specialized missions, such as armed reconnaissance and attacks on hard targets. By mid-1967, Long Range Aviation will probably include some 750 medium bombers, about one-third of them supersonic BLINDERS. Heavy bomber strength will probably have been reduced to about 100 aircraft. We estimate as follows the strength of Long Range Aviation in the mid-1960's:

BOMBERS AND TANKERS Heavy ¹²	Mid-1965	Mid-1966	Mid-1967
BISON	90	80	70
BEAR	45	40	35
Total	135	120	105
Medium			
BADGER	700	600	500
BLINDER	150	200	250
Total	850	800	750

SPACE SYSTEMS

30. We have no evidence of Soviet plans or programs for the military use of space. We think it highly unlikely, however, that the USSR would omit this field in its vigorous search for qualitative improvements in its military posture and for achievements with which to support claims of superiority. We believe that the Soviets could launch reconnaissance, communications, meteorological, navigation, or geodetic satellites at any time. There is

¹² The Assistant Chief of Staff, Intelligence, USAF, believes that the heavy bomber force will have the composition included in the following table (see footnotes 5 and 7):

BOMBERS AND TANKERS Heavy	Mid-1965	Mid-1966	Mid-1967
BISON	110	100	90
BEAR	70	60	50
Follow-on	20	40	60
Total	200	200	200

no evidence that the Soviets are working to develop offensive space weapon systems, but the course of the Soviet space program to date suggests that any effort in this field would be directed toward an orbital bombardment vehicle. It would be technically feasible for the Soviets to launch weapons of limited capability into orbit in the mid-1960's, but we do not believe they could achieve an effective offensive capability by the end of the decade.¹³

IMPLICATIONS OF CAPABILITIES

31. The capabilities of Soviet long range striking forces will be only in part a function of the numbers of weapons available, their performance, and the adequacy of supporting elements. Equally critical will be the way in which the Soviets employ their striking forces, their ability to maximize the effects of these forces under the various circumstances in which war could begin, and their assessment of Western capabilities and plans.

32. The current Soviet targeting concept reflects the view that even a general nuclear war is likely to be protracted and that victory requires the reduction of all elements of the Western warmaking potential. These elements include: the bases of strategic delivery systems; nuclear weapons facilities; communication and governmental centers; military and war supporting industry. We have no evidence that avoidance of heavy civilian casualties is among the objectives underlying Soviet targeting.

¹³ The Assistant Chief of Staff, Intelligence, USAF, believes that a Soviet orbital bombardment capability could be achieved prior to the end of the decade. Based on technical considerations and using a (large) SS-8 booster and techniques known to exist today or to be within Soviet capability, he believes that such a system could be developed as early as 1965. This system could be composed of orbital vehicles of 30,000 pounds gross weight, which could deorbit a very high yield weapon to a CEP of 4 n.m. initially and later to 1.8 n.m.

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33. Should the Soviets conclude that the West was irrevocably committed to an imminent nuclear attack on the USSR, they would launch their available ready forces in a preemptive attack designed to blunt the expected Western blow. The mixed force which they have available for such operations would permit flexibility of tactics and complicate Western defensive problems, but would pose severe difficulties of coordination. Initial missile and bomber attacks against the US would probably extend over a period of many hours, and those against Eurasia over at least a few hours. We believe that at present the Soviets would plan to employ few if any missile submarines in initial attacks against the US; initiation of routine submarine patrols within missile range of the US could change this situation.

34. By the mid-1960's, the USSR will have acquired a substantial missile capability to deliver nuclear weapons against the US, in addition to its already formidable forces for strikes in Eurasia. Significant portions of this force will be relatively invulnerable to attack. The Soviets will be in a position to strike preemptively at the fixed bases of an important segment of the US nuclear delivery force, and they will have some prospect that a portion of their own force could survive an initial US attack and retaliate with high yield nuclear weapons. With the long range striking forces we estimate that they will have in the mid-1960's, however, the Soviets could still not expect to destroy the growing numbers of US hardened, airborne, seaborne, and fast reaction nuclear delivery vehicles.

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SOVIET CAPABILITIES FOR STRATEGIC ATTACK

THE PROBLEM

To estimate probable trends in the strength and deployment of Soviet forces for strategic attack and in Soviet capabilities for such attack through mid-1970.

SCOPE NOTE

This estimate covers those Soviet military forces which are suitable for strategic attack. Other major aspects of the Soviet military strength are treated in separate estimates on air and missile defense, on theater forces, on the nuclear program, and on the space program. Trends in the USSR's overall military posture and in Soviet military policy are examined in an annual estimate, the next issuance of which will be in the first quarter of 1965.

SUMMARY AND CONCLUSIONS

A. Major changes in Soviet programs for the development of strategic attack forces have become apparent during the past year. In 1962-1963, certain ICBM and ballistic missile submarine programs came to an end, and a pause ensued in the growth of these forces. At the same time, the pace of ICBM research and development increased markedly. More recently, the USSR has resumed ICBM deployment in a new and improved configuration, and the probable advent of a new submarine which we believe is designed to carry ballistic missiles probably marks the start of yet another deployment program. (*Para. 1*)

B. Soviet military policy in recent years has been to build up strategic offensive and defensive capabilities, maintain and improve large general purpose forces, and pursue research and development

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programs in advanced weapons. In our view, the primary concern of Soviet military policy for the next several years will continue to be the strengthening of the USSR's strategic deterrent. The evidence to date does not indicate that Soviet deployment programs are directed toward a rapid numerical buildup. We do not believe that the USSR aims at matching the US in numbers of intercontinental delivery vehicles. Recognition that the US would detect and match or overmatch such an effort, together with economic constraints, appears to have ruled out this option. (*Paras. 2-4*)

C. A stress on qualitative factors suggests that the Soviets see technological advance in weapons as a means by which they can improve their strategic position relative to the West. In the ICBM force, for example, major qualitative improvements currently being achieved include hardening and dispersal (which will sharply increase the number of aiming points), as well as better accuracy and larger payloads. (*Paras. 4-5*)

D. By the end of the decade, Soviet intercontinental attack capabilities will rest primarily upon an ICBM force of some hundreds of launchers, supplemented by a sizable missile-submarine fleet and a large but reduced bomber force. These forces will represent a marked improvement in Soviet retaliatory capability and a considerable strengthening of the Soviet deterrent. In the light of current and programmed US military capabilities, however, we do not believe that the Soviets will expect to achieve, within the period of this estimate, strategic attack capabilities which would make rational the deliberate initiation of general war. (*Para. 5*)

The ICBM Program

E. Major developments since mid-1963 include a proliferation of test facilities at Tyuratam, flight-testing of two third-generation ICBM systems (the SS-9 and SS-10), and the beginning of construction of hard, single-silo ICBM launchers, probably for one or both of the new systems. The deployment of second-generation ICBMs has probably ceased, and a pause between the second- and third-generation programs has slowed deployment. We believe that the Soviets now have about 200 operational ICBM launchers, and that the total number of operational launchers in mid-1965 will approximate the low

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side of the 250-350 range previously estimated. These figures do not include R&D launchers at Tyuratam.¹ (Paras. 6-8, 10-18, 31)

F. Research and development on third-generation systems has been generally successful. The SS-9 system appears to be an outgrowth of the SS-7 with improved accuracy and a larger payload. We have little information on the characteristics of the SS-10. Both new systems could enter service in 1965. We believe that work is underway on still other ICBM systems, which we cannot as yet identify. We continue to believe that the Soviets are developing a very large ICBM, capable of delivering [] We estimate that it could enter service in the period mid-1966 to mid-1967. In addition, the Soviets might be developing a new, small ICBM employing improved propellants. If they are, it could become operational as early as 1967. (Paras. 19-26)

G. The Soviets are now emphasizing deployment of single-silo hard launchers for ICBMs, and we expect this emphasis to continue. We expect third-generation deployment to include the expansion of both second-generation complexes and the initiation of additional new complexes. (Paras. 9, 27)

H. The growth of the Soviet ICBM force over the next several years will be influenced by a number of factors. In economic terms, the program must compete for funds with other military and space activities and with the civilian economy. In the technical field, we believe that research and development is proceeding on additional, follow-on ICBM systems, and we doubt that with these in the offing the USSR will fix upon any one or even two existing systems for urgent deployment on a large scale. We are also mindful that the interruptions that marked second-generation deployment programs may recur. In strategic terms, the Soviets evidently judge that an ICBM force in the hundreds of launchers, together with their other strategic forces, provides a deterrent. On the basis of the evidence now available, to us, we do not believe that they are attempting to deploy a force capable of a first-strike which would reduce the effects of US

¹ The Assistant Chief of Staff, Intelligence, USAF, considers the estimate of the numbers of launchers operational now and expected in mid-1965 is too low. He estimates that the Soviets now have about 240 operational launchers, including about 20 at Tyuratam and a 10 percent allowance for unlocated launchers. He believes the total number in mid-1965 will be between 275 and 325. See his footnote, page 11, para. 10.

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retaliation to an acceptable level.² At the same time, we expect them to continue a vigorous R&D effort in the hope of achieving important technological advances, in both the offensive and defensive fields, which would alter the present strategic relationship in a major way. (Para. 30)

I. We estimate a Soviet ICBM force of 400-700 operational launchers for mid-1970; in our previous estimate, we projected this force level for mid-1969. By mid-1970, we believe that the force will include most or all of the launchers now deployed, some 125-200 single-silo SS-9/10 launchers, and 10-20 launchers for very large ICBMs. We believe that the attainment of as many as 700 operational launchers by mid-1970 would be likely only if the Soviets begin deploying a new, small ICBM at a rapid rate about 1967. The Soviet ICBM force which we estimate for mid-1970 will represent a substantial increase in numbers and deliverable megatonnage. Further, the trend to single silos will increase the number of aiming points represented by individual launch sites from about 100 at present to some 300-575 in mid-1970, the bulk of them hard. This will greatly improve the survivability, and hence the retaliatory capability, of the force.³ (Paras. 32-37)

J. In the past few years the Soviets have improved the readiness and reaction time of their ICBM force. Our evidence now indicates that from the normal state of readiness, the soft sites which constitute the bulk of the present force would require 1-3 hours to fire. Hard sites would require about half an hour or less. A higher state of alert (i.e., 5-15 minutes to fire) can be maintained at most soft sites for a number of hours and at most hard sites for days. (Paras. 38-40)

K. There is ample evidence that the Soviets designed their soft ICBM systems to have a refire capability. We have re-examined the

² The Assistant Chief of Staff, Intelligence, USAF, considers that the Soviets may already have directed their intensive military R&D effort toward achievement of an effective first-strike counter-force capability before the close of this decade. Considering the length of time covered by this estimate and the number of unknowns involved, he believes this is a possibility which should not be disregarded.

³ The Assistant Chief of Staff, Intelligence, USAF, considers the ICBM force by mid-1970 could range from approximately 600 to as high as 900 operational launchers depending on whether a new, small, easily deployed system is introduced. (See his footnote to table on page 18.) An ICBM force of this size would increase the number of aiming points represented by individual launch sites to approximately 400-700 in mid-1970.

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factors likely to affect refire time, and conclude that it would require little longer to fire the second missile than the first. Our present estimate of refire time is 2-4 hours, considerably less than previously estimated. We believe that, on the average, two or more missiles are provided per soft launcher for initial firing, refire, and maintenance spares. We believe that hard ICBM sites do not have a refire capability. (Paras. 41-43)

L. We have little evidence on the hardness of Soviet ICBM sites. Given the many uncertainties in this area, only a very tenuous estimate can be made, but our best judgment is that Soviet hard ICBM sites have a hardness in the 300-600 psi range. This implies a design overpressure in the 200-400 psi range, somewhat higher than previously estimated.* (Paras. 49-50)

M. Qualitative improvements in the force can be expected as new ICBM systems enter service. Currently operational ICBMs have CEPs on the order of 1-2 n.m. The SS-9 will probably have an accuracy of 0.5-1.0 n.m. with radio assist, or 1.0-1.5 with all-inertial guidance. By mid-1970, the Soviets could achieve accuracies on the order of 0.5 n.m. or better. The SS-9 will probably carry a payload [] as compared with [] for second-generation ICBMs.

We do not believe that the Soviets have yet developed penetration aids or multiple warheads, but they may do so in the future, particularly if the US deploys antimissile defenses. (Paras. 44-48)

MRBMs and IRBMs

N. Deployment programs for the 1,020 n.m. MRBM and the 2,200 n.m. IRBM are now ending, and almost certainly will be completed by mid-1965. We estimate that at that time the MRBM/IRBM force will have a strength of about 760 operational launchers, 145 of them hard. The bulk of the force (about 90 percent) is deployed in western USSR, with the remainder in the southern and far eastern regions of the USSR. This force is capable of delivering a devastating first strike or a powerful retaliatory attack against targets in Eurasia, and can attack such areas as Greenland and Alaska as well. Some of the

*The Assistant Chief of Staff, Intelligence, USAF, considers that, given the uncertainties involved, no meaningful estimate of the hardness of Soviet hard sites can be made. However, he believes that the design overpressure of Soviet hard sites is no greater than the 100-300 psi previously estimated.

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MRBM/IRBM launchers are probably intended to support ground operations. (*Paras. 51-55*)

O. We doubt that the Soviets will expand their MRBM/IRBM force during the period of this estimate. It is possible, however, that operational capabilities will be improved by the introduction of a new missile system, which probably would be deployed in single-silos. Such a system, employing improved propellants, could become operational in the 1966-1968 period and would probably replace some of the soft launchers now operational. (*Paras. 56-59*)

Missile Submarine Forces

P. The Soviets now have operational some 40-50 ballistic missile submarines, including 8-10 nuclear powered. Most of these submarines are equipped with 350 n.m. missiles and must surface to fire. One or two are equipped with a new 700 n.m. submerged-launch missile, and others will probably be retrofitted. The USSR also has operational about 30 cruise-missile submarines, including 11-14 nuclear powered. The majority are equipped with 300 n.m. missiles designed for low altitude attack, primarily against ships. The remainder carry a newer 450 n.m. version of this missile, which probably has an improved capability to attack land targets. Current Soviet missile submarines carry relatively few missiles: the ballistic missile classes, two or three, and the cruise missile types, up to eight. The entire present force has a total of 120-140 ballistic missile tubes and 135-150 cruise-missile launchers. (*Paras. 60-71*)

Q. We believe that the Soviets have under construction a submarine which we estimate to be the first of a new nuclear-powered, ballistic missile class. We estimate that it will employ the submerged-launch 700 n.m. missile, and have a few more missile tubes than current classes. The first unit will probably become operational in 1965. Beyond this new class, we consider it unlikely that the Soviets will develop an entirely new follow-on ballistic missile submarine system within the period of this estimate, although they will probably continue to improve existing systems. We believe that they will also continue to construct cruise-missile submarines. By mid-1970 the Soviet missile submarine force will probably number 100-130 ships, about half of them cruise-missile submarines and about half ballistic. (*Paras. 72-75*)

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R. In the past year, limited numbers of Soviet missile submarines have engaged in patrols in the open oceans. We expect a gradual expansion of this activity. By the end of the decade, Soviet missile submarines will probably be conducting regular patrols throughout the North Atlantic and Pacific, and possibly into the Mediterranean. (Para. 76)

Long-Range Bomber Forces

S. We have no recent evidence of major changes in the capabilities and structure of Soviet Long-Range Aviation (LRA). The force now includes some 190-220 heavy bombers and tankers and 850-900 mediums. It is being improved primarily through the continued introduction of Blinder supersonic dash medium bombers and through modification of older bombers for air-to-surface missile delivery, for aerial refueling, and for reconnaissance. Use of both medium and heavy bombers of the LRA in support of maritime operations has increased. (Paras. 80-86)

T. Considering noncombat attrition factors and the requirements for Arctic staging and aerial refueling, we estimate that the Soviets could put somewhat more than 100 heavy bombers over target areas in the US on two-way missions. Recent trends lead us to believe that medium bombers do not now figure prominently in Soviet plans for an initial bomber attack against North America. Nevertheless, should they elect to do so, we believe that at present the Soviets could put up to 150 Badgers over North American target areas on two-way missions. We have serious doubt about how effectively the Soviets could launch large-scale bomber operations against North America. We consider it probable that initial attacks would not be simultaneous, but would extend over a considerable number of hours.⁵ (Paras. 91-97)

U. The Soviets will probably maintain sizable bomber forces, which will decrease gradually through attrition and retirement. Although continued Soviet work on advanced transports could be applied to military purposes, we think it unlikely that the Soviets will bring any follow-on heavy bomber into operational service during the period

⁵ The Assistant Chief of Staff, Intelligence, USAF, considers this paragraph seriously underestimates the manned aircraft threat to the continental US. In the event war should eventuate and the USSR attacks the US with nuclear weapons, he believes this will be an all-out effort aimed at putting a maximum number of weapons on US targets. He therefore estimates that the number of heavy and medium bombers, including BADGERS on one-way missions, could exceed 500. See his footnote on page 32, para. 94.

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of this estimate. We believe that Blinder medium bombers, some equipped with advanced air-to-surface missiles, will be introduced during much of the period of this estimate. By mid-1970, Long-Range Aviation will probably include some 140-180 heavy bombers of present types and 300-500 mediums, mostly Binders.* (Paras. 87-90)

Space Weapons

V. Although the USSR almost certainly is investigating the feasibility of space systems for use as offensive and defensive weapons, we have no evidence that a program to establish an orbital bombardment capability is seriously contemplated by the Soviet leadership. We think that orbital weapons will not compare favorably with ICBMs over the next six years in terms of effectiveness, reaction time, targeting flexibility, vulnerability, average life, and positive control. In view of these considerations, the much greater cost of orbital weapon systems, and Soviet endorsement of the UN resolution against nuclear weapons in space, we believe that the Soviets are unlikely to develop and deploy an orbital weapon system within the period of this estimate. (Paras. 98-103)

*The Assistant Chief of Staff, Intelligence, USAF, believes the Soviets will continue to consider manned strategic aircraft an important adjunct to their ICBM force. He estimates that the USSR will introduce a follow-on heavy bomber. He further estimates the heavy bomber force will remain at about 200 or somewhat larger, depending on the timing of the expected follow-on bomber, and that by mid-1970 the medium bomber/tanker force will probably still include about 650-850 aircraft. See his footnote to table on page 31 following para. 90.

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SOVIET CAPABILITIES FOR STRATEGIC ATTACK

THE PROBLEM

To review the evidence acquired since the publication of NIE 11-8-64, and to assess its implications for the Soviet ICBM forces through mid-1966.

SCOPE NOTE

NIE 11-8-64, "Soviet Capabilities for Strategic Attack," dated 8 October 1964, TOP SECRET RESTRICTED DATA, is a comprehensive estimate of Soviet capabilities in the field of strategic attack. This memorandum has been prompted by new evidence which requires us to review our judgments of Soviet ICBM programs and, in particular, the pace of ICBM deployment. A new estimate in the 11-8 series, which will deal with all Soviet strategic attack systems, will be issued in late 1965.

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DISCUSSION

1. In NIE 11-8-64, we estimated that deployment of second-generation ICBMs in soft sites and three-silo hard sites had come to an end, and that the Soviet ICBM program was moving into a new phase characterized by dispersed single silos. Subsequent evidence has confirmed these trends, but single silos apparently have been started at a faster pace than previously estimated.

2. We have now identified about 125 single silos, all begun since about January 1964. The actual number under construction is probably larger. When compared to past rates of starting ICBM launchers, the present level of activity is high; the largest number of ICBM launchers previously started in a single year was about 90. The building rate, however, is not without precedent nor does it represent what could be termed a maximum effort; at one point in 1963 about 140 ICBM launchers were under construction in a variety of site configurations, and MR/IRBM launcher construction was also continuing.

3. We believe that the most advanced of these launchers will not reach operational status until late 1965. This means that the mid-1965 operational ICBM strength will be about 225,¹ somewhat lower than our previous estimate of 235-250.² On the other hand, the pace of single-silo deployment could carry the force by mid-1966 beyond the high side of the previously estimated range of 285-320. Considering the estimated time to bring launch groups to operational status and making allowance for undetected launchers now under construction, our new estimate for mid-1966 is:

Soft Launchers	146 ³
Hard (3 silo)	78
Single Silo	126-178
TOTAL (Rounded)	350-400 ¹

The number of hardened ICBM launchers will increase from the present figure of 78 to 200-250 in mid-1966. The force will become more dispersed, with 150-200 separate hardened sites in mid-1966 in contrast with the present 26.

¹These totals do not include R&D launchers at Tyuratam. There are now about 25 completed R&D launchers and we believe this number will increase to approximately 45 by mid-1966. We judge these launchers are not normally available for operational use, but varying numbers of them could be prepared to fire ICBMs at the US depending on the amount of advance notice.

²The Assistant Chief of Staff, Intelligence, USAF, continues to hold to his footnote estimate in NIE 11-8-64, but considers the mid-1965 figure will be at the low side of his forecast spread of 275-325 (including Tyuratam launchers and a small allowance for unlocated second-generation operational launchers). The mid-1966 figure will somewhat exceed the high side of his forecast spread of 325-425 operational launchers in the field and at Tyuratam.

³This number does not include the SS-large, which we estimated in NIE 11-8-64 at 0-5 for mid-1966. Because this missile has not yet been tested, we no longer believe it could become operational by that date.

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4. We cannot yet determine what missiles are intended for the new silos. The Soviets have tested two third generation ICBM systems, the SS-9 and the SS-10. We believe that the SS-9 which has followed a normal test program will be deployed in at least some of the silos. The SS-10 was test fired eight times between April and October 1964 but, for reasons we cannot explain, there have been no test firings since. It too may be deployed in some of the silos.

5. Finally, there is evidence pointing to the development of other missiles, including one which is probably small, at the test range. Thus, it is possible that some of the silos are intended for a new ICBM, which has not been identified in test firings.⁴ If so, the deployment of the launchers so far in advance of the flight tests of the missile would represent a departure from previous Soviet practice. Such an innovation would imply confidence that no major changes in the weapon system will be required; it could stem from a desire to reach a planned ICBM force level more quickly than would otherwise be possible. An intensive and successful test program would be necessary for this missile to become available for extensive deployment as early as mid-1966. Thus it is possible that many of the new silos listed as operational in mid-1966 will at that time lack missiles.

6. It is not now clear how far the Soviets will push the current deployment program or whether it will be succeeded by follow-on programs. Though by mid-1967 the Soviets almost certainly will have more than the 330-335 operational launchers estimated in NIE 11-8-64, it is yet too early to revise our estimate that the Soviets will achieve a force of 400-700 ICBM launchers over the next five years. We expect, however, that evidence collected before the publication of NIE 11-8-65 this far will help to clarify Soviet goals.⁵

⁴ We are unable to determine whether this missile would employ solid or liquid propellants; we believe that storable liquids are likely.

⁵ The Assistant Chief of Staff, Intelligence, USAF, sees no basis in current evidence for change to his footnote in NIE 11-8-64, which projected 600-900 operational ICBM launchers by mid-1970.

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SOVIET CAPABILITIES FOR STRATEGIC ATTACK

THE PROBLEM

To estimate the strength and capabilities of Soviet strategic attack forces through mid-1967, and to estimate general trends in these forces over the next decade or so.

NOTE

Estimates of Soviet strategic attack capabilities for the present and the next few years can be made with high confidence; those for the period five to 10 years in the future are, of course, highly tentative. The Soviet planners themselves may not yet have set clear force goals for the 1970-1975 period. Even if they have, it seems certain that such decisions will be modified repeatedly in response to changes in military technology, in other Soviet weapons programs, in US forces, in resource availability, and in the general Soviet view of world affairs.

CONCLUSIONS

A. Over the next 10 years, we estimate a considerable strengthening of Soviet strategic attack forces, particularly in retaliatory capabilities, with chief emphasis on ICBMs. We do not believe, however, that the Soviets will expect to achieve, within the period of this estimate, forces which would make rational the deliberate initiation of general war. We believe that they will continue to adhere to the concept of a deterrent force. A stress on qualitative factors suggests that the Soviets see technological advance in weapons as a means by

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which they can improve their strategic position relative to the West. (Paras. 4-7)^{1 2}

B. *ICBM Force.* The present Soviet ICBM force of 224 operational launchers represents a formidable capability in terms of deliverable megatonnage but it is a predominantly soft, concentrated force. Apparently recognizing its vulnerability, the Soviets are now deploying ICBMs in dispersed single silos. Within the next two years, the number of ICBM launchers will approximately double, but the number of separate launch sites will increase from about 100 to at least 300. (Paras. 8-10, 25, 31)

C. We estimate that the Soviet ICBM force in 1975 will be somewhere between 500 and 1,000 operational launchers. A force near the high side of the range would probably consist primarily of small ICBMs in single silos. By contrast, a force near the low side, though including substantial numbers of small, single silo launchers, would probably incorporate greater qualitative improvement and significant numbers of larger ICBMs, perhaps with multiple warheads and penetration aids. It is possible that within the next 10 years the Soviets will deploy a rail mobile ICBM system. (Paras. 23, 26-30)³

D. *MRBM/IRBM Force.* During the past year, the Soviet MRBM and IRBM force leveled off at about 735 operational launchers, some 135 hard, deployed at almost 200 sites. It is capable of delivering a devastating first strike against targets in Eurasia, but like the present ICBM force it is soft and concentrated. By 1975, the Soviets will

¹ Deterrence is defined as the prevention from action by fear of the consequences. Deterrence is a state of mind brought about by the existence of a credible threat of unacceptable counteraction.

² The Assistant Chief of Staff, Intelligence, USAF, would reword the last two sentences as follows:

"We believe they will continue to adhere to the concept of a deterrent force so long as they continue to be in a posture of strategic inferiority, but the intensive Soviet military R and D effort raises the possibility that Soviet leaders already are focusing on achievement of a strategic superiority which would enable more aggressive pursuit of their political aims, perhaps within the time frame of this estimate."

³ The Director, Defense Intelligence Agency, and the Assistant Chief of Naval Operations (Intelligence), Department of the Navy, do not concur in the high side of the estimated ICBM launcher spread for mid-1975, believing it to be too high. See their footnote to paragraph 27.

The Assistant Chief of Staff, Intelligence, USAF, estimates that the Soviet ICBM force in 1975 will include at least 1,000 operational launchers and could well be above that figure.

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probably have replaced the major portion of the force with new solid-fueled missiles deployed in dispersed hard sites and on mobile launchers. The flexibility and survivability of such a force may lead them to conclude that the same target system could be covered with fewer launchers. We estimate that in the 1970-1975 period Soviet MRBM/IRBM strength will stabilize at some 350-700 launchers. (*Paras. 38, 40, 42-46*)

E. *Missile Submarines.* The Soviet Navy has 43-48 ballistic missile submarines, including 8-10 nuclear-powered, with a total of 120-140 tubes. Construction of ballistic missile submarines of current classes ended in 1963. We estimate, however, that the Soviets will produce a new class which could become operational in 1968. It will almost certainly be nuclear powered and will probably carry more missiles than are carried by current classes, perhaps 6-12. A new submarine-launched ballistic missile with a range of about 1,000 n.m. will probably enter service in two or three years, and by 1975 a 2,000 n.m. missile may be available. At that time the Soviets will probably have some 60 ballistic missile submarines, including about 20 of a new type. Only recently have Soviet ballistic missile submarines regularly carried out ocean patrols; this activity will increase, and by 1975 about 25 percent of the force will probably be on station. (*Paras. 47, 49, 51, 53-54, 65*)

F. In recent years, the USSR has emphasized construction of cruise missile submarines. The Soviet Navy now has 39-43, including 16-18 nuclear-powered with a total of 195-210 launchers. These submarines were initially intended to counter naval task forces, but their mission may be expanded to include land targets. Construction appears to be tapering off, but will probably continue at a reduced rate for several years. By 1975, the Soviets will probably have 60-70 cruise missile submarines, possibly including some of a new type. At that time, they will probably also have available new types of cruise missiles. (*Paras. 47, 55-57, 65*)

G. *Bomber Force.* Long Range Aviation, a force of some 200 heavy bombers and 800 mediums, is in general much better suited for Eurasian than for intercontinental operations. This force will decrease gradually through attrition and retirement. The Soviets may

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develop another new aircraft of medium bomber range, but we believe it unlikely that they will introduce a follow-on heavy bomber into Long Range Aviation. By 1975, the heavy bomber force will probably be reduced to about 50 aircraft, and the medium bomber force to some 250-500, comprised largely of Blinders.* (Paras. 66, 70, 72-76)

H. *Space Weapons.* Our evidence does not indicate that the USSR is developing offensive space weapons, but it is almost certainly investigating their feasibility. We do not believe that they will deploy such weapons within the next 10 years. This conclusion is based upon our judgment that such systems will not compare favorably in cost and effectiveness with ground-based systems and, to a lesser extent upon our view that the Soviets would see political disadvantages in deploying weapons in space. The USSR has, however, orbited reconnaissance and communications satellites, and is probably developing other military support systems. (Paras. 83, 86, 87)

*The Assistant Chief of Staff, Intelligence, USAF, believes the Soviets will continue to consider manned strategic aircraft an important element of their intercontinental striking forces. He estimates that the USSR will introduce a follow-on heavy bomber into Long Range Aviation. He further estimates that in 1975 LRA will still include 125-200 heavy bombers and 450-600 medium bombers, up to half of which could be a follow-on to the Blinder.

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DISCUSSION

I. SOVIET POLICY TOWARD STRATEGIC ATTACK FORCES

1. The change in leadership in the USSR has introduced a new element of uncertainty into Soviet military policy over the coming period. The main change has been one of style, but although the new leaders avoid Khrushchev's demagoguery, they appear no less committed than he to ambitious programs for overall economic growth, an improvement in agriculture, more consumer goods, and stronger defenses. Yet the tight economic situation continues, the competition for high-quality resources remains high, and agricultural deficiencies persist.

2. The major difference in the coming period may be the inability of a collective leadership to chart a clear course. It is already apparent that the USSR is proceeding into the next five-year economic plan period in a political environment more favorable to military interests than in the last years of the Khrushchev era. After a lull of a few months various military spokesmen are openly asserting the need for an enlarged defense effort, the importance of more professional participation in military-political decisions, and a claim to a greater share of industrial support. In particular, the issue of the proper allocation of manpower between civilian and military industry has been raised, along with calls for a greater research and development effort to support military needs. Moreover, the restoration of Chuykov as commander of the Ground Forces, may signify an end to Khrushchev's continual effort to pare down the general purpose forces and save money this way. In sum, Khrushchev's effort to keep a restraining hand on the military sector may be giving way to the various internal and external pressures for a total increase in the USSR's defense effort.

3. Even if this trend fails to develop, we think that strategic attack forces would not be significantly affected by any tightening of defense spending. We know of no significant opposition, under Khrushchev or since, to the buildup of large missile forces. What opposition did develop was largely over the issue of whether the buildup should be at the expense of other more traditional arms. Thus, while there are many political uncertainties inherent in a change of leadership, we think it unlikely that this will have any short-term effect on strategic attack forces. Over the longer term, of course, political and economic developments could lead to another crisis that could involve specific military programs as well as general doctrinal concepts. Thus our judgments about longer term programs and goals must be qualified because of the probability of important political shifts in the Soviet leadership during the period of this estimate.

4. These goals will be influenced by the Soviet view of their prospects in related military fields, especially antimissile forces. Developments on the US

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side are equally important: for example, the large US ICBM force almost certainly influences the USSR to increase its force, and US deployment of ballistic missile defenses might incline them toward even higher numbers. Technological advances will play a major part, and a stress on qualitative factors is already evident as part of the USSR's effort to improve its relative strategic position.

5. Given all these uncertainties, we rely on past and present trends, as well as Soviet requirements and capabilities, in estimating the broad outlines of future developments. In general, we believe that over the next decade the Soviets will continue to adhere to the concept of a deterrent force.⁵ We believe that strategic attack forces will include a variety of weapon systems, with chief emphasis upon ICBMs. We expect a considerable strengthening of these forces, particularly their capabilities for retaliation. We do not believe, however, that the Soviets will expect to achieve by the mid-1970s strategic attack capabilities which would make rational the deliberate initiation of general war.

6. We have considered the possibility of a Soviet attempt to acquire a combination of offensive and defensive forces, which, going beyond deterrence, would permit a first strike which would limit damage to the Soviet Union to acceptable proportions. Considering the number, hardness, and reaction times of targets to be struck in such an attack, and the likelihood that many, such as Polaris submarines, would escape destruction, such a Soviet effort would require both a large, highly sophisticated missile force and a widespread, very effective air and missile defense. In view of the technological and economic magnitude of the task and the likelihood that the US would detect and match or overmatch the Soviet effort, we believe it highly unlikely that the Soviets could achieve such a force during the next 10 years.⁶

7. Short of an effective first-strike capability as defined above, but greater than might seem adequate for deterrence, lie force levels which would reflect no comprehensive strategic or doctrinal design. Such forces might result from the sheer momentum of deployment programs, attempts to capitalize on a temporary technical advantage, or a psychological urge to match the US in delivery systems. But they would most likely result from Soviet difficulties in defining and agreeing on force levels which would constitute adequate deterrence.

⁵For the view of the Assistant Chief of Staff, Intelligence, USAF, see his footnote to Conclusion A.

⁶The Assistant Chief of Staff, Intelligence, USAF, considers that a major Soviet effort to achieve a first-strike counterforce capability during the next ten years is likely in view of the emphasis which he believes the Soviets currently are devoting to their massive military R and D programs which might eliminate their strategic inferiority. Whether such a capability can be attained may depend in considerable measure on the timeliness with which any Soviet R and D programs or technological breakthroughs are detected.

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SOVIET CAPABILITIES FOR STRATEGIC ATTACK

THE PROBLEM

To estimate the strength and capabilities of Soviet strategic attack forces through mid-1968, and to estimate general trends in these forces over the next 10 years or so.

SUMMARY AND CONCLUSIONS

A. The Soviets retain their belief in the primacy of strategic attack and defense forces, to deter the US and to support their foreign policy. Soviet strategic attack forces will continue to include a variety of weapon systems, with chief emphasis upon ICBMs. The Soviets are building forces which we believe will give them, in the next year or two, greatly increased confidence that they have a retaliatory capability sufficient to assure the destruction of a significant portion of US industrial resources and population. They will probably also seek, through both strategic attack and defense programs, to improve their ability to reduce the damage the US can inflict on the USSR should deterrence fail and war in fact occur. We do not believe, however, that the Soviets will expect to achieve by the mid-1970's strategic capabilities which would make rational the deliberate initiation of general war.¹

¹ Maj. Gen. Jack E. Thomas, the Assistant Chief of Staff, Intelligence, USAF, believes that developments of the past year reflect a continuing Soviet dissatisfaction with a posture of strategic inferiority vis-a-vis the US and a determination to eliminate such inferiority. He would add the following to the final sentence:

"... but programs already underway, plus a continuing strong R&D effort, reflect a Soviet determination to rise from a position of strategic inferiority to one of at least numerical parity with the US in the belief that such a posture would markedly enhance the aggressive pursuit of Communist aims."

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B. *ICBM Force.* The Soviets now have about 335 operational ICBM launchers. We estimate that the USSR will have some 670-765 operational launchers in mid-1968. This is considerably more than we anticipated in our last estimate and reflects our belief that construction of launchers has been started at a higher rate than ever before.

C. In mid-1968, about half the operational launchers will be for the small and relatively inaccurate SS-11. This missile is suitable mainly against large, soft targets such as cities. Deployment of the SS-9, a large missile more suitable for attacking hard targets, is also continuing, though at a slower rate than the SS-11.

D. The present Soviet stress on dispersed single silos, especially those for the SS-11, probably reflects decisions taken several years ago to improve sharply the survivability and thus the retaliatory capabilities of the ICBM force. In mid-1968 about 80 percent of the total launchers will be hard.

E. The Soviets might not find it advantageous to build ICBM forces much larger than those we estimate for 1968. On the other hand, they might consider their deterrent to be significantly more convincing and their military power improved if they can acquire an ICBM force about as large as that of the US. We therefore estimate a Soviet ICBM force of some 800-1,100 operational launchers in mid-1971 and some 800-1,200 in mid-1976.²

F. A 1976 force of about 1,200 launchers would probably consist primarily of small, less expensive ICBMs. A force of 800 or so would probably incorporate greater qualitative improvements and significant numbers of larger ICBMs. Characteristic of future deployment will be hard silos and possibly mobile launchers. Qualitative improvements will probably include much better accuracies and may include sophisticated reentry vehicles and penetration aids. The development of the force will probably be marked by interruptions and leveling-off

² Maj. Gen. Jack E. Thomas, the Assistant Chief of Staff, Intelligence, USAF, believes that the Soviets could construct single silo ICBM launchers at a rate which would enable the USSR to achieve numerical parity with the planned US program by 1970.

He would delete the last sentence and substitute the following:

"We estimate a Soviet ICBM force of some 1,000-1,100 operational launchers by 1970-1971. If the USSR develops a MIRV capability, the launcher total may hold at around 1,000-1,200; otherwise, the Soviets probably will have upwards of 1,200 and perhaps 1,500 launchers by the mid-1970's."

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phases as new, more effective systems are introduced and older systems are phased out.

G. We think that ICBM forces falling anywhere within these estimated ranges could be considered as meeting a broad Soviet criterion for a credible deterrent. Thus we intend our estimate of future force levels as a range of uncertainty, either side of which would reflect the same basic Soviet strategic concept. For a period so far ahead, however, much will depend on the interplay between US and Soviet decisions taken in the interim.

H. The Soviets have recently conducted feasibility tests of what may be a depressed trajectory ICBM or a fractional orbit bombardment system. We cannot determine which, if either, of these systems will be deployed. Either could become operational during 1968 but probably would not be deployed in large numbers.

I. *MRBM/IRBM Forces.* No major changes in the MRBM/IRBM force have been noted during the past year. We estimate that the current force comprises somewhat over 700 operational launchers, some 135 of them hard, deployed at about 200 sites. This force is capable of delivering a devastating attack against Eurasian targets but is predominantly soft and concentrated. We believe that throughout the period of this estimate the USSR will maintain some 500-700 MRBM/IRBM launchers. Qualitative improvements are expected to include solid propellant missiles, more hard launchers, and probably mobility for some portion of the force.

J. *Missile Submarines.* The Soviets presently have some 45 ballistic missile submarines (8-10 nuclear-powered) with a total of about 130 launchers, and an equal number of cruise missile units (21-23 nuclear-powered) with about 250 launchers. No new ballistic missile submarines have become operational since 1963. We believe, however, that a new class of ballistic missile submarine—which almost certainly will be nuclear-powered and may carry 8 or more missiles with a range of some 1,000 to 2,000 n.m.—will be operational by mid-1968. We estimate that by 1976 the Soviets will have some 60 to 70 ballistic missile submarines, including about 30 of the new type. We believe that production of cruise missile submarines will continue, but

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at a reduced rate, into the 1970's. We estimate that some 55-65 of these units will be operational in 1976.

K. Regular open ocean patrols by Soviet missile submarines have been stepped up in recent months. This patrol activity will probably continue to increase. By the early 1970's, as much as 30 percent of the ballistic missile submarine force may be on station in potential missile launch areas at any one time. This number could be augmented by whatever portion of their cruise missile submarine force the Soviets allocate to a strategic attack mission.

L. *Strategic Bomber Force.* Long Range Aviation is now composed of 950-1,000 bomber/tanker aircraft, 200-210 of which are heavies and the rest mediums. The primary mission of the heavies is intercontinental attack; at present, the Soviets could probably put about 100 heavy bombers over US target areas on two-way missions. The medium bombers are mainly for use against Eurasian targets, though a few squadrons might be employed for initial strikes against Alaska, Canada, Greenland; and Iceland. The Soviets could augment the force over North America by using medium bombers on one-way missions, but we think this unlikely. The Soviets may develop a new medium bomber during the period of this estimate, but probably not a new heavy. We estimate that by 1976 attrition and retirement will have reduced the heavy force to some 70-100 aircraft and the medium force to about 300-500.³

M. *Space Systems.* For some years the USSR has been orbiting several types of satellites including reconnaissance types. Within the next 5 to 10 years the Soviets will probably develop and employ a variety of space systems (such as navigation and communications satellites) to further support their strategic attack forces. The Soviets

³Maj. Gen. Jack E. Thomas, the Assistant Chief of Staff, Intelligence, USAF, believes the Soviets will continue to consider manned strategic aircraft an important element of their intercontinental strike forces. He estimates the USSR has the capability and—considering the currently limited size of the Soviet ICBM force—the requirement for a major manned strategic bomber effort against the US in the event of general war, and could put as many as 400 heavy and medium bombers over US target areas.

He estimates the USSR is likely to introduce both a follow-on heavy bomber and a new medium bomber into LRA within the next few years. He concludes that in 1976 LRA will consist of about 200 heavy bombers and some 400-600 medium bombers of both new and old types.

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have long had the capability to orbit a nuclear-armed satellite and have frequently alluded to "orbital rockets." Recent feasibility tests could lead to a multiple-orbit bombardment system. For the foreseeable future, however, ICBMs are likely to be much more effective and far less costly. This, plus the political liability which would be incurred by orbiting a nuclear weapon, lead us to believe that the Soviets are unlikely to deploy a multiple-orbit bombardment system in space during the period of this estimate.

N. *Research and Development.* The Soviets continue to pursue a vigorous R&D program to develop and improve strategic attack systems. A high level of R&D activity is expected to continue. The USSR appears to be about as capable as the US of developing new strategic systems and subsystems which its leaders feel are important enough to justify the expenditure of resources. In deciding to deploy any new weapon system, however, the Soviets would have to weigh the prospective gain against the economic cost and the capabilities of the US to detect and counter it.

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DISCUSSION

I. TRENDS IN POLICY AND DOCTRINE

1. The present Soviet political leaders seem more attentive than was Khrushchev to professional military advice, and they have been willing to authorize increases in both military expenditures and manpower. Current military writings reveal a search for ways to broaden the options available to the USSR in the application of its military power. The Soviets are showing increasing interest in improving the capabilities of their general purpose forces to meet contingencies short of general war. At the same time, costly and intensive development of strategic forces is continuing.

2. The Soviets retain their belief in the primacy of strategic attack and strategic defense forces, to deter the US and to support foreign policy. A major element of their policy for many years has been to build strategic attack and defensive capabilities so as to achieve forces which could pose a direct threat to the US and its allies and could defend the Soviet homeland against Western nuclear attack. To this end, the Soviets built a variety of forces to hold Western Europe hostage. Over the years, they developed an intercontinental attack force, at first relying primarily on bombers, then increasingly on ICBMs in soft sites. They are now deploying hardened and dispersed ICBM systems at an accelerated pace. They probably expect that these systems—supplemented by the other elements of their strategic attack forces—will increase the credibility of their deterrent by providing a retaliatory capability sufficient to assure the destruction of a significant portion of US industrial resources and population.

3. We believe that over the next 10 years, Soviet strategic attack forces will include a variety of weapon systems, with chief emphasis upon ICBMs. We expect a considerable strengthening of these forces, particularly their capabilities for survival and retaliation. In addition, they will probably seek, through both offensive and defensive programs, to improve their ability to reduce the damage the US can inflict on the USSR.

4. Since Khrushchev's ouster, there has been some renewal of discussion about preemptive attack in Soviet military writings.⁴ In April 1966, Marshal Sokolovskiy stated that "there is an increase in the possibilities for the prompt detection not only of the onset of the attack, but also of the onset of direct preparation of an attack—that is, there are possibilities to prevent a sudden attack." He goes on to imply that a Soviet attack may be directed toward blunting the enemy attack and disorganizing his command and control mechanisms, as well as against the broad economic and military base of the nation. This type of theoretical

⁴By preemptive attack we mean an attack initiated on the conviction that an enemy attack is imminent.

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discussion may be intended to provide a rationale for developing strategic attack forces which could contribute to improved damage limiting capabilities.

5. We have considered the possibility of a Soviet attempt to acquire a combination of offensive and defensive forces which would permit a first strike sufficient to limit damage to the Soviet Union to acceptable proportions. Considering the number, hardness, and reaction times of targets to be struck in such an attack, and the likelihood that many would escape destruction, such a Soviet effort would require a large, highly sophisticated missile force, widespread and effective air and missile defenses, and an effective antisubmarine warfare (ASW) capability. In view of the technological and economic magnitude of the task and the likelihood that the US would detect and match or overmatch the Soviet effort, we believe the Soviets would not consider it feasible to achieve, by the mid-1970's, strategic capabilities which would make rational the deliberate initiation of general war.

6. The specific Soviet force goals will be influenced by a wide variety of factors. These could involve, for example, the sheer momentum of deployment programs, attempts to capitalize on some temporary technological advantage, or a psychological urge to match or surpass the US in delivery systems. The large US strategic missile force has almost certainly influenced the USSR to increase its ICBM force and to develop and deploy an antimissile defense system. The Soviets must be aware, however, that current US programming calls for a leveling off of strategic missile deployment within the next year or so; they may see this as offering them the opportunity to catch up with or surpass the US in numbers of ICBM launchers. On the other hand, the prospect of continuing qualitative improvements in US strategic attack forces (e.g., improvements in accuracy, multiple reentry vehicles [RVs], etc.) will require constant Soviet reevaluation of the numbers and types of weapons they need. US deployment of an ABM system would probably elicit an increase in Soviet attack capabilities in a variety of ways, including development of sophisticated RVs and penetration aids. But in any case, the Soviets will probably face great uncertainties in deciding what precise force levels and composition would constitute adequate deterrence.

7. The Sino-Soviet dispute is not likely to affect Soviet programs for strategic attack forces during the period of this estimate. Such plans as the Soviets have developed in recent years have probably considered the possibility of a confrontation with the Chinese. Soviet forces for strategic attack in the Eurasian area are sufficiently large and flexible to deal with Communist China as well as other targets.

8. The Soviets will almost certainly continue intensive R&D on strategic attack systems. They probably regard such an effort, like their other military R&D programs, as imperative in order to prevent the US from gaining a technological advantage and, if possible, to gain some advantage for themselves. Evidence

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shows that the Soviets are still intensively developing systems to improve their strategic attack capabilities, especially in the missile field. However, in deciding to deploy any new weapon system they would have to weigh the prospective gain against the economic cost and the capabilities of the US to detect and counter it.

II. INTERCONTINENTAL BALLISTIC MISSILES

A. Recent Deployment Activities

9. The principal new development in Soviet ICBM deployment during the past year has been the starting of launcher construction at a rate higher than ever before. After a possible slowdown during the first half of 1965, the start rate for small single silos was accelerated. However, a delay has occurred in the completion of the small silos and somewhat fewer launchers are now considered operational than were previously estimated. The large silo program has moved ahead about as estimated, although some increase in the start rate probably occurred in this program also. A slight speedup in the pace of construction has been detected at these latter sites and the large silos are being completed about three months earlier than estimated. We do not know how long these trends will continue.

B. Force Levels and Composition to 1968

10. All 224 of the first and second generation ICBM launchers are believed to remain operational. There is no indication of a Soviet effort to modify or phase out older sites. We believe, however, that at least one of the SS-6 sites may have a role in the Soviet military space program.

11. We have identified 25 ICBM complexes, and we believe it highly unlikely that additional complexes remain undetected. On the other hand, we consider it likely that some single silos in early stages of construction at these complexes have escaped detection; we make allowance for this in our estimate. We believe that operational Soviet ICBM strength over the next two years will be comprised solely of the types of systems shown below.

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ESTIMATED OPERATIONAL ICBM LAUNCHERS

	1 Oct 1968	Mid-1967	Mid-1968
Soft			
SS-6*	4	3-4	0-4
SS-7	128	128	128
SS-8	14	14	14
Subtotal	148	145-146	142-146
Hard (Triple Silo)			
SS-7*	69	69	69
SS-8	9	9	9
Subtotal	78	78	78
Hard (Single Silo)			
Large (SS-9)*	35	70-80	130-140
Small (SS-11)*	70-80	130-180	320-400
Subtotal	105-115	200-260	450-540
TOTAL*	329-339	423-484	670-765
Tyuratam ICBM Launchers			
Soft	13	15	15
Hard	28	31	34
TOTAL	41	46	49

* At least one of these launchers may now be allocated to the Soviet space program.

* Thirty of these launchers may be equipped with SS-9s.

* These numbers do not reflect the possibility that the Soviets could fit some single silos for an emergency launch capability shortly before they become fully operational.

* We estimate that some, say 10, of the launchers at Tyuratam could have an operational as well as R&D and training role. We judge that the other launch facilities at Tyuratam are not normally available for operational use, but they could be prepared to fire ICBMs at the US, the number depending upon the amount of advance notice.

* Maj. Gen. Jack E. Thomas, the Assistant Chief of Staff, Intelligence, USAF, believes that inasmuch as operational launchers at Tyuratam pose a threat to target areas in the US

all Tyuratam ICBM launchers should be included in the operational totals.

For the launchers listed in the table he would substitute:

	1 Oct 1968	Mid-1967	Mid-1968
Field Sites	329-339	423-484	670-765
TTMTR	41	44	44
TOTAL	370-380	467-528	714-809

Large Silos (SS-9)

12. Construction of large single-silos for the SS-9 missile began in early 1964 at six new ICBM complexes. We believe that until late 1965, the construction start rate averaged 10-11 sites per quarter but subsequently increased somewhat to an average of 15-16 sites per quarter. We have now identified about 130 large silos operational and under construction. These silos are deployed in

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groups of six, but we believe that each has its own launch control facility and that they can become operational one by one.

Small Silos (SS-11)

13. Construction of small single-silos for the SS-11 missile began in March 1964. The SS-11 program differs from other Soviet ICBM programs in several respects: (a) the silos are smaller and less complex; (b) they are being built in greater numbers; and (c) construction had been started on some 100 deployed sites before the first test firing of the SS-11 missile.

14. Construction of small single-silos is now underway at nine complexes. We believe that until late 1965, construction starts averaged 22-23 sites per quarter, although the rate was not constant and there may have been a slowdown early that year. Subsequently, however, the rate increased to about 50 starts per quarter, and perhaps as many as about 60. We have now identified about 340 small silos operational or under construction at the nine complexes. They are apparently being deployed in groups of 10 with one launch control facility for each group.

C. Operational Capabilities of the ICBM Force⁶

Survivability

15. More than 40 percent of the launchers in the current Soviet ICBM force are soft and are hence highly vulnerable, but the vulnerability of the force is decreasing as hard single-silo sites become the predominant elements. All present types of Soviet hard ICBM sites, including the new single silos, are estimated to have a design overpressure of 200-400 psi.⁶⁷ We believe that single-silo sites are so widely dispersed as to present separate aiming points.

Reaction Time

16. Reaction times for current Soviet ICBM systems vary widely according to propellant (cryogenic or storable liquid) and site configuration (soft, multi-silo hard, or single-silo hard). From normal readiness conditions, the times required to fire after the execution order is received are estimated to range from 30 seconds to 3 minutes for the SS-11 system to at least 12 hours for the SS-6. Somewhat more than half of the launchers in the current operational

⁶ For performance characteristics of Soviet ICBMs, see Table I.

⁶⁷ A hard site is designed to remain *completely operable* at a specified overpressure from given weapon yields. This specified overpressure is called design overpressure. Hardness is the overpressure at which, for given weapon yields, a site becomes *inoperable*. The design overpressure estimated above is for a 10 MT weapon. Hardness will vary with differences in engineering practice and in weapon yield.

⁷ Maj. Gen. Jack E. Thomas, the Assistant Chief of Staff, Intelligence, USAF, considers that, given the uncertainties involved, no meaningful estimate of the design overpressure of Soviet hard sites can be made. If a figure is required, he believes that a value of 100-300 psi should be used.

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force are capable of firing in 15 minutes or less when at normal readiness; about two-thirds of the estimated operational launchers in mid-1968 will be capable of firing in five minutes or less.

Alternate Targeting

17. We believe that Soviet strategic missile forces are capable of alternate targeting, but that this capability is not as flexible and rapid as in US systems, because of the nature of the guidance systems and the lack of onboard computers.

Reentry Vehicles

18. The Soviets have moved toward RVs with lower ballistic coefficients and larger radar cross section. Such vehicles are less accurate and more vulnerable to detection and interception. On the other hand, they lend themselves to simpler nuclear weapon design and would be more adaptable to terminal guidance (though the latter would require an RV design different from those now employed in the SS-11). Current Soviet RVs may have some inherent hardness against X-rays [

]

Accuracy

19. All present Soviet ICBMs have radio-inertial or all-inertial guidance systems [

The best current Soviet ICBM accuracy is represented by the SS-9, which we estimate has a CEP of 0.5-1.0 n.m. now and will probably approach 0.5 n.m. next year with normal product improvement. With its large payload and this accuracy, the SS-9 is suitable for attacking hard targets. The SS-11, though developed somewhat more recently, was evidently intended for a different purpose and does not incorporate as accurate guidance as the SS-9. With its relatively small payload and an estimated present CEP [] it is useful mainly against large, soft targets. The very blunt, slow-speed RV of the SS-11 contributes to its inaccuracy. The SS-11 could incorporate accuracy improvements to achieve CEPs [] This would require, however, a redesigned RV and a test program covering about two years. We think it unlikely that the Soviets will undertake such a program in light of the probable development of more accurate follow-on systems.

20. We have considered Soviet capabilities to achieve very high ICBM accuracies, focusing mainly on whether and when the Soviets are likely to achieve CEPs of about 0.25-0.5 n.m., to increase the effectiveness of relatively small RVs against small, hard targets. To achieve CEPs in the lower end of this range the Soviets would have to develop new guidance systems, probably featuring midcourse corrections, and to design new RVs for either faster reentry or limited terminal guidance maneuver. These changes could be incorporated into present or follow-on ICBM systems after a development program of about

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five years, though in the case of any present system the changes could be such as to constitute for all practical purposes the development of a new system. We would probably detect the testing of such a system one to two years prior to IOC.

21. We think it unlikely that the Soviets have embarked on the development of very high accuracies for their present systems. In the case of SS-11, accuracy was not a critical factor and the Soviet object has clearly been to rapidly develop and deploy a large number of survivable city-busters. In view of past Soviet development practices, the major changes that would be required in the SS-11, and the probable Soviet intent to develop a follow-on ICBM with improvements of various sorts (see later section), it is likely that very high accuracy in a small ICBM would await a new system. In the case of the SS-9, very high accuracy would be required if the Soviets elected to develop an effective MIRV capability against hard targets. In this case, retrofit into the SS-9 force or incorporation into a follow-on large ICBM system would be possible alternatives.

22. We do believe, however, that the Soviets will seek very high accuracies for some future ICBM systems. Considering the techniques required and probable development times, we think that such systems will probably have operational CEPs of about 0.5 n.m. when they reach IOC in the late 1960's or early 1970's. If a decision to achieve an 0.25 n.m. CEP is made soon, these new systems could have this accuracy by about 1972. We have no evidence that the Soviets have made such a decision but consider it likely that they will do so in the next year or so.

Refire

23. We believe that Soviet soft launchers have a refire capability and that on the average two missiles are available for each such launcher. This gives the current force a theoretical refire capability of more than 140 ICBMs some 2-4 hours after the initial launch from soft sites. As soft sites are phased out, this capability will decline. It is unlikely that the hard sites have a refire capability.

D. ICBM Research and Development

Construction Activity at Tyuratam

24. We estimate that there are 55 launchers operational or under construction at Tyuratam. Most of the facilities there can be associated with existing ICBM systems or with the space program, but some of those recently completed or under construction are probably intended for systems still under development. Testing of some new missiles appears likely during the next year or so.

Testing of Current ICBMs

25. Test range firing of all currently deployed ICBMs has continued over the past year. Launches have been made from Tyuratam and, for some ICBMs,

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SOVIET CAPABILITIES FOR STRATEGIC ATTACK

NOTE

This Memorandum to Holders is prompted by a recent review of Soviet submarine order-of-battle which requires us to change the judgments made in NIE 11-8-66, "Soviet Capabilities for Strategic Attack," dated 20 October 1966, TOP SECRET, RESTRICTED DATA, LIMITED DISTRIBUTION, on the size and composition of the Soviet missile submarine force.

DISCUSSION

1. In NIE 11-8-66, we estimated that as of 1 October 1966 the Soviet missile submarine force had some 45 ballistic missile submarines (8-10 nuclear-powered) with a total of about 130 launchers, and an equal number of cruise missile units (21-23 nuclear-powered) with about 250 launchers.

2. A recent review of Soviet submarine order-of-battle indicates that as of 1 October 1966 there were 36 ballistic missile submarines in the Soviet Navy (7 of them nuclear-powered) with a total of about 100 launchers. The cruise missile submarine force—whose primary mission is to counter naval task forces—was found to have a slightly greater number of units than previously estimated, and a greater proportion of nuclear-powered units. Since the latter are equipped with more missile launchers than the diesel-powered boats, approximately 265 launchers (rather than 250) were found to be in the cruise missile submarine force.

3. We continue to believe that a new type of ballistic missile submarine will enter service by mid-1968. Since fewer ballistic missile submarines are now operational than previously estimated, however, our projection of the number of such units which will be operational in 1976 has been reduced from some 60-70 to about 55-65. There is no change in our estimate of the total number of cruise missile sub-

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marines for 1976 (i.e., 55-65 units) but we believe the proportion of nuclear submarines in the cruise missile force will be somewhat higher at that time (i.e., about 45 out of 60, rather than 40 or so out of 60).

4. A new table listing the estimated Soviet missile submarine strength for 1966 through 1968 follows. The new table supersedes that in Section IV of NIE 11-8-66.

ESTIMATED SOVIET MISSILE SUBMARINE STRENGTH, 1966-1968

	<u>1 Oct 1966</u>	<u>Mid-1967</u>	<u>Mid-1968</u>
Ballistic Missile Submarines			
Nuclear			
H-I (3 tubes)	3	2-1	1-0
H-II (3 tubes)	4	5-6	6-7
New class (8 or more tubes)	0	0	1
Subtotal	<u>7</u>	<u>7</u>	<u>8</u>
Diesel			
Z-Conversion (2 tubes)	6	6	6
G-I (3 tubes)	22	22	22-20
G-II (2 tubes)	1	1	1-3
Subtotal	<u>29</u>	<u>29</u>	<u>29</u>
TOTAL Ballistic Missile Submarines	<u>36</u>	<u>36</u>	<u>37</u>
Cruise Missile Submarines			
Nuclear			
E-I (6 tubes)	5	5	5
E-II (8 tubes)	<u>20-21</u>	<u>24-25</u>	<u>28-29</u>
Subtotal	<u>25-26</u>	<u>29-30</u>	<u>33-34</u>
Diesel			
W-Conversion (1 to 4 tubes)	13	13	13
J-Class (4 tubes)	<u>7-10</u>	<u>9-12</u>	<u>11-15</u>
Subtotal	<u>20-23</u>	<u>22-25</u>	<u>24-28</u>
TOTAL Cruise Missile Submarines	<u>45-49</u>	<u>51-55</u>	<u>57-62</u>

5. In addition, the final sentence of the last paragraph of Section VII A of NIE 11-8-66 should be deleted and replaced by the following:

In any case, we believe we could identify a MOBS sometime during its test program which would probably extend over a year or two. If the Soviets follow established test procedures, identification is likely to occur about a year prior to attainment of an accurate, reliable system.

(NOTE: Paragraphs 1-4 approved by USIB--13 March 1967
Paragraph 5 approved by USIB--2 March 1967)

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Soviet ICBM Accuracy and MIRVs

In the early 1960s, with the appearance of photoreconnaissance satellites and other new sources of information, discussion in the Estimates tended to shift away from what had been broad discussions of overall Soviet policy and strategy to more tightly focused analyses of strategic forces technologies and programs. It was now possible to estimate such things as Soviet missile accuracy and range with some confidence. The size and location of Soviet missile and bomber forces were known and it was possible to plot production and rates of deployment. Confidence in strategic forces analysis grew as innovative techniques were developed to fully exploit the new sources of information, while the prospect of a truly devastating strategic surprise gradually diminished.

The 1960s were perhaps the most prolific decade for the development of strategic nuclear weapons. By 1966 the United States had completed the deployment of its first generation ICBMs (Atlas and Titan-I) and deployment of the second generation (Titan-II and Minuteman-I and -II) was well under way. With the retirement of the earliest Atlas launchsites all US ICBMs now were deployed in specially hardened, below-ground silos. Development of a third-generation ICBM (Minuteman-III) with three multiple, independently targetable reentry vehicles (MIRVs)³ would result in that missile's initial operational capability and deployment by the end of the decade. Intercontinental-range B-52s had been operational with nuclear weapons since 1955, and in 1960 the first US nuclear-powered ballistic missile submarine (SSBN), *USS George Washington*, was commissioned. US strategic nuclear forces now comprised a "strategic triad" made up of intercontinental-range missiles, long-range heavy bombers, and nuclear-powered ballistic missile submarines.

Parallel developments were under way in the Soviet Union. From 1966 to 1968 the Soviets phased out the four first-generation SS-6 ICBMs, while completing deployment of their second-generation ICBM (the SS-7) in 1965, followed by small numbers of the less successful

³ MIRVs significantly enhance the capabilities of an ICBM by allowing one missile to be used against several targets—one for each warhead or reentry vehicle (RV). The Minuteman-III, for example, could be used against up to three targets. An MRV (multiple reentry vehicle) system has no targeting flexibility and generally is not capable of attacking more than one target, but releases several (usually two or three) RVs in a fixed pattern for a "shot-gun effect." In the 1960s, both the United States and the Soviet Union used MRVs to achieve greater effectiveness than otherwise might have been possible with the guidance systems then available.

Both MRVs and MIRVs were more survivable than single-warhead missiles when used against an active defense system, such as the Safeguard ABM, because they multiplied the number of incoming warheads that would have to be destroyed to mount an effective defense.

SS-8. Meanwhile, two new missiles achieved their initial operational capabilities and began deployment: the large SS-9 and the smaller SS-11. All were deployed in hardened underground silos. The Soviets were the first to send ballistic missiles to sea, initially on conventionally powered submarines—the Zulu-V ballistic missile submarines (SSBs—the absence of the “N” denoting a conventional propulsion system) and the Golf-I and -II SSBs—but deploying the nuclear-powered Hotel-I and -II SSBNs by the mid-1960s, followed shortly thereafter by the Yankee-I SSBN, a Soviet nuclear-powered submarine design similar to the *George Washington*. The Soviet heavy bomber force was built around the Tu-95 Bear and remained small.⁴

It was the SS-9 that caused US intelligence analysts the most concern at this time. Bigger than the SS-6, it carried an enormous payload that made it effective against even hardened, underground ICBM silos.⁵ Worse, from 1966 it looked as if the Soviets might be testing the SS-9 with multiple warheads, possibly MIRVs. Complicating the situation was consideration of two ballistic missile defense (ABM) systems in the United States: “Sentinel,” which would protect population centers, and later “Safeguard,” which would defend ICBM silos. Both these systems were capable of defending against a limited nuclear attack and had deterrent value against a larger one, but would be overwhelmed by a Soviet ICBM force with large numbers of MIRVs. The impending large-scale deployment of Soviet MIRVs thus brought into question the credibility of the whole US land-based nuclear deterrent.

At issue, too, was the structure and strategic purpose of Soviet strategic forces considered as a whole. If the Soviets sought nuclear supremacy, they probably would pursue a “counterforce” strategy, with the aim of destroying US strategic forces in a single, preemptive strike. This would require an ICBM force made up of large numbers of “silo killers”: missiles with the combination of accuracy and yield necessary to destroy US ICBMs in their silos before they could be used in retaliatory strikes. On the other hand, if the Soviets were content to build up their nuclear forces as a deterrent (whether as a long-term solution or merely an intermediate goal), they could opt for a “countervalue” strategy, in which US cities might be the principal targets. In a countervalue strategy, force accuracy and hard-target kill capability would be less important than survivability and reliability. Judgments concerning the accuracy, size, and configuration of Soviet ICBMs thus were important elements in understanding the structure of Soviet strategic forces taken as a whole.

⁴ Bison comprised about half the force until the mid-1970s.

⁵ The capability to destroy an ICBM silo, or other protected targets (hard-target kill capability) derived from a combination of missile accuracy and warhead yield. Within certain limits, a more accurate missile can carry a smaller warhead and still be capable of destroying an ICBM silo.

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SOVIET CAPABILITIES FOR STRATEGIC ATTACK

THE PROBLEM

To estimate the strength and capabilities of Soviet strategic attack forces through mid-1969 and to estimate general trends in those forces over the next 10 years.

CONCLUSIONS

A. Soviet programs for strategic attack forces have been aimed at narrowing the lead that the US has held in this field. In addition to military considerations, the Soviets undoubtedly see political and psychological advantages in improving their position relative to that of the US. Soviet strategic policy has recognized that its first aim must be to maintain a credible deterrent, not only against US nuclear attack on the USSR but also against US actions that would endanger Soviet vital interests. They have been building strategic attack forces to assure that, however nuclear war began, the US would face destruction on a scale unacceptable to its leadership. Beyond this, they are also seeking, through both offensive and defensive strategic programs, to limit the damage they would sustain should general war occur.

B. The Soviet leaders almost certainly believe that their relative strategic position has improved markedly in recent years, primarily as the result of extensive intercontinental ballistic missile (ICBM) deployment. We estimate that the ICBM force has more than tripled in the past 2 years, that it now has about 700 operational launchers, and that by the end of 1968 will have about 1,000, approximately the same number as the US. We believe that most of these (nearly 80 percent) will be in dispersed, hardened single silos, greatly improving the survivability and readiness of the force. The USSR

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will remain inferior, however, in numbers of bombers and submarine-launched ballistic missiles. Moreover, the Soviets almost certainly realize that even this relative improvement in their position does not promise to be permanent. Consequently, they almost certainly believe that to improve their strategic position vis-a-vis the US requires continued effort.

C. For the longer term, Soviet leaders face decisions of increasing complexity and uncertainty. One reason is the inescapable interaction between US and Soviet strategic capabilities in the 1970's. Even with no increase in the number of US launchers, planned improvements in the US strategic attack forces during the next decade will confront the Soviets with much greater numbers of more sophisticated warheads. Moscow must also be concerned that the planned "thin" US antiballistic missile (ABM) defense might be expanded to provide significant damage-limiting capabilities against Soviet forces.

D. Another complicating factor is that their strong research and development (R&D) effort has given the Soviets a broader range of options than in the past, and their programs will almost certainly reflect different priorities from those which have hitherto been controlling. They probably will place greater emphasis on qualitative improvements—including survivability, capacity to avoid early warning (EW) and to penetrate enemy defenses, accuracy, and reliability. The strategic situation emerging in the 1970's will make these qualities more important than sheer numbers of launchers.

E. If the Soviets believed that they could obtain a meaningful advantage over the US in strategic forces, they would, of course, attempt to do so, and they may forge ahead in one or another particular field. In deciding whether to undertake any new weapon program, however, they would have to weigh the prospective gain against the economic cost and the capabilities of the US to detect and counter it. In endeavoring to improve their overall strategic posture, they will be alert to improving their counterforce and damage-limiting capability in the belief this would not only deter the US from nuclear war but would also reduce US opposition to aggressive Soviet actions in support of political objectives elsewhere in the world. As indicated by our projections of Soviet forces for the next 10 years, however, we believe that they will not consider it feasible to achieve strategic capabilities

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which would permit them to launch a first strike against the US without receiving unacceptable damage in return.

F. *ICBMs.* We estimate that the Soviet ICBM force will number something more than 1,000, but is not likely to exceed 1,300 launchers by mid-1972; by mid-1977 we estimate a force numbering more than 1,000, but not exceeding 1,500 launchers.¹ A force near the low side, say 1,100, would reflect a deliberate Soviet decision for political reasons to hold the number of launchers at a level about equal to that of the US. Regardless of their decisions as to number of launchers, the Soviets will probably begin deployment of at least one new ICBM system within the next few years. We believe that the Soviets are flight testing a small solid-propellant ICBM and may be developing a new large liquid-propellant system. They are probably investigating a mobile ICBM system and may deploy one. Qualitative improvements may include more sophisticated reentry vehicles (RVs), penetration aids, multiple reentry vehicles (MRVs), multiple independently-targeted RVs (MIRVs), hardened warheads, and better accuracy.

G. *Space Weapons.* For almost 2 years, the Soviets have been conducting flight tests which we believe relate to development of a fractional orbit bombardment system (FOBS). We believe that the chances are better than even that the Soviets will within the next few years deploy a FOBS in order to negate or delay US warning and otherwise complicate the US defense problem; any deployment would be in relatively small numbers. We consider it unlikely that they will deploy a multiple-orbit bombardment system (MOBS) in view of the probable adverse political consequences and of its cost and effectiveness as compared to other systems.

H. *MRBM/IRBMs.* The Soviets will continue to maintain massive strategic forces against Eurasia. We estimate that new MRBM and IRBMs will supersede present systems within the next 10 years, and

¹ Maj. Gen. Jack E. Thomas, the Assistant Chief of Staff, Intelligence, USAF, would delete the first sentence and substitute the following: "We estimate that the Soviet ICBM force in the mid-1970's will number more than 1,000 but is not likely to exceed 1,500 launchers if the USSR by then has operationally deployed missiles with some type of multiple reentry vehicles. Otherwise, and particularly in view of the numbers of targets in the US and the planned US ABM capability, the Soviet Union probably will have considerably more than 1,500 launchers. A program which added only 100 launchers per year beyond those already identified would exceed 1,700 by 1977."

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that the introduction of improved missiles may result in some decrease in numbers. We believe that one or more new missiles in this category could become operational as early as 1969. Some of the new missiles may be deployed in mobile launchers.

I. *Submarine-Launched Missiles.* The Soviets are clearly placing increased emphasis on ballistic missile submarines. They are introducing a new nuclear-powered class of ballistic missile submarine with 16 launch tubes which we believe will carry a missile with a range of about 1,500 n.m. We estimate that, by the mid-1970's, the Soviets will have twice as many ballistic missile submarines as at present, and six to seven times as many launchers.

J. *Long Range Aviation (LRA).* Attrition and retirement of older models will gradually reduce the heavy bomber force. We still believe that the Soviets are unlikely to introduce a follow-on heavy bomber. The medium bomber force will probably decline as Badgers are phased out; by the mid-1970's it will probably be composed largely of the supersonic-dash Blinder.²

² Maj. Gen. Jack E. Thomas, the Assistant Chief of Staff, Intelligence, USAF, believes the Soviet Union will continue to consider manned strategic aircraft an important element of their intercontinental strike forces. He estimates the USSR is likely to introduce both a follow-on heavy bomber and a new medium bomber into LRA within the period of this estimate. He expects that in the mid-1970's LRA still will include about 200 heavy bombers (approximately the same number as at present), and some 400-600 medium bombers of both new and old types.

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DISCUSSION

I. TRENDS IN POLICY AND DOCTRINE

1. Our estimate of overall Soviet military policy and doctrine appears in NIE 11-4-67, "Main Trends in Soviet Military Policy," dated 20 July 1967, SECRET. As we emphasized there, the most important issues of Soviet military policy center upon the strategic relationship with the US, and strategic weapons continue to receive primary emphasis in Soviet planning, deployment, research and development (R&D). Soviet strategic policy has recognized that its first aim must be to maintain a credible deterrent; the Soviets are building forces which we believe are giving them greatly increased confidence in their ability, even in retaliation, to assure the destruction of a significant portion of the US population and industrial resources. Beyond this, they are also seeking, through both offensive and defensive strategic programs, to improve their ability to limit the damage they would sustain should general war occur.

2. The Soviet leaders almost certainly believe that their relative strategic position has already improved markedly. They are aware that US deployment of strategic missile launchers has leveled off; their own intercontinental ballistic missile (ICBM) deployment programs, which have been underway for the past few years, will give them a rough parity with the US in numbers of ICBM launchers within the next year or so. After many years of strategic inferiority, they undoubtedly see political and psychological advantages in the attainment of such parity even though it does not alter the basic situation of mutual deterrence and still leaves them inferior in heavy bombers and submarine-launched missiles.

3. Moreover, the Soviets almost certainly realize that even this relative improvement in their position does not promise to be permanent. For the longer term, they are aware of announced US programs for various qualitative improvements in strategic missile forces which would erode relative Soviet strength. They must also calculate the effects of the US decision to begin antiballistic missile (ABM) deployment, allowing not only for the system as announced but also for the possibility of its expansion.

4. To maintain an assured destruction capability in the strategic situation that is emerging, qualitative improvements, particularly those related to survivability and capacity to penetrate enemy defenses, become more important than sheer numbers of launchers. There will undoubtedly be pressures for a continuing enlargement of the ICBM force, and it may continue to grow. But having attained rough numerical parity in ICBMs with the US, the Soviet planners will probably give increased attention to other options. Further measures to enhance survivability and effectiveness of the strategic attack forces could include

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a greater emphasis on ballistic missile submarines, development of a mobile ICBM, ABM defense of ICBM launching sites, and a variety of systems designed to elude or penetrate US ABM defenses.

5. Thus, the Soviets face a number of uncertainties in deciding what force composition and force levels they should attempt to acquire for the 1970's. The interaction between US and Soviet strategic programs introduces extraordinary complications and variables. But given the technical complexities and long lead times required for modern weapons, the Soviet leaders must already have made some decisions for future strategic systems, and will have to make others before long. Whatever their specific decisions, we believe that they are determined to maintain an assured destruction capability, and that they will seek to improve their strategic position *vis-a-vis* the US.

6. The internal situation appears favorable to continuation of a strong military effort. The present leadership is evidently more responsive than was Khrushchev to the views of the military hierarchy. We estimate that military and space expenditures for 1967 represent an increase of 16 percent over 1965, a decided change from the more stable spending level of 1963-1965. It is not yet clear how the recent 15 percent increase in the publicly stated Soviet defense budget may relate to actual expenditures. Some of it probably reflects programs for military aid to Vietnam and the Middle East, as well as changes in the Soviet price structure and accounting practice. In any case, however, we think it clear that real Soviet military expenditures are continuing to rise.

7. The continuing development and large-scale deployment of strategic weapons has been largely responsible for the increase in these expenditures of the past few years. The Soviets have given roughly equal weight to forces for strategic attack and for strategic defense. We cannot estimate at this time how the increase in 1968 defense expenditures will be allocated among the various force components, but the high priority of strategic programs is almost certain to continue.

8. We believe that the Soviets' effort to improve their strategic position relative to the US—already evident in their ICBM deployment—will be extended to some other components of their strategic attack forces, and that they may see an opportunity to forge ahead in some particular field. We believe that they will also continue to maintain massive strategic forces against Eurasia. And they will almost certainly pursue intensive R&D on strategic attack systems, both in order to prevent the US from gaining a technological advantage and to gain any advantage they can for themselves. In deciding whether to develop and deploy any new weapon system, however, they would have to weigh the prospective gain against the economic cost and the capabilities of the US to detect and counter it.

9. In considering the goals of their strategic weapons programs, the Soviet leaders will, of course, examine the possibility of achieving a first-strike counter-

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force capability which—in conjunction with their strategic defenses—would be sufficient to limit to acceptable proportions the damage which a US retaliatory strike could inflict on the USSR. Considering the number, hardness, and reaction times of US targets which would have to be struck in such an attack, and the likelihood that many would escape destruction, such a Soviet effort would require not only a very large, highly sophisticated strategic attack force, but also widespread and effective air and missile defenses as well as an effective antisubmarine warfare (ASW) capability. The technological and economic magnitude of the task would be formidable, however, and the Soviets would have to consider the likelihood that the US would detect and match or overmatch the Soviet effort. In endeavoring to improve their overall strategic posture they will be alert to improving their counterforce and damage-limiting capability in the belief this would not only deter the US from nuclear war but would also reduce US opposition to aggressive Soviet actions in support of political objectives elsewhere in the world. All things considered, however, we continue to believe that the Soviet leaders will not expect to acquire strategic capabilities which they would deem sufficient to permit them to launch a first strike against the US without receiving unacceptable damage in return.

II. INTERCONTINENTAL BALLISTIC MISSILES

A. Current Deployment

10. We believe that within the past year, hard, single-silo launchers have come to comprise the bulk of the Soviet ICBM force. We estimate the present strength of the force to be about 700 operational launchers, deployed in 25 large complexes across the central USSR. We estimate that more than 450 of these launchers are single silos for the SS-9 and SS-11 ICBM systems; older systems, which are deployed in soft sites or in triple-silo hard sites, account for the remainder.

11. *Status of First and Second Generation ICBM Sites.* We estimate that virtually all of the first and second generation ICBM launchers remain operational, most of them employing the SS-7 ICBM. We believe that two of the four SS-6 launchers have been assigned a primary space role; the other two will probably also be allocated to the space program or phased out altogether in the near future. We believe that the 14 soft SS-8 launchers will have been phased out by mid-1969. We believe that the nine hard SS-8 launchers remain operational.

12. In previous estimates we considered the possibility that a group of SS-7 triple-silo launch sites had been equipped with the SS-9 ICBM. We now believe, however, that these sites are equipped with SS-7s and that SS-9s are deployed only in the single-silo configuration. We have no evidence suggesting phase-out of any SS-7 launchers, and believe that they will remain operational for some time to come.

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B. Force Levels and Composition to Mid-1969

13. We believe that the Soviets are developing new ICBMs and that at least one of them could be ready for operational deployment soon,³ but we doubt that it will reach IOC in hard sites by mid-1969. Our estimate of the Soviet ICBM force for the next 2 years includes only types now operational, but we do not rule out the possibility that it will include a few missiles of a new type.

ESTIMATED OPERATIONAL ICBM LAUNCHERS

	1 OCTOBER 1967	MID-1968	MID-1969
Soft			
SS-6	2	0	0
SS-7	128	128	128
SS-8	14	0-14	0
Subtotal	144	128-142	128
Hard (triple-silo)			
SS-7	69	69	69
SS-8	9	9	9
Subtotal	78	78	78
Hard (single-silo)			
Large (SS-9)	114	162-174	180-222
Small (SS-11)	330-380	480-530	560-610
Subtotal	444-494	642-704	740-832
TOTAL ^a	666-716	848-924	946-1,038

^a In addition to the ICBM launchers cited above, we believe that the Soviets have about 50 launchers at the Tyuratam range which are associated with ICBM development. About 40 of these launchers are considered to be complete, and we believe that most of them could be readied to fire at the US. We are unable to make any valid estimate of the time required to ready them, reaction times, or the availability of missiles for them.

C. Operational Capabilities of the Force

Survivability

14. The vulnerability of the force is decreasing. We estimate that about 80 percent of the current operational force is deployed in hard sites. We think it likely that by mid-1969 80 percent of the force will be in single silos. We believe that single-silo sites are so widely dispersed as to present separate aiming points. We believe that all hardened ICBM launchers deployed in the field are designed to remain completely operable when exposed to overpressures on the order of 200-400 psi.

³ See paragraph 22 below regarding the recent R&D firings of a solid-propellant ICBM. It might achieve IOC before mid-1969. Hence our estimate of ICBMs for the next 2 years may have to be modified. It is also possible that [] relates to both ICBM and IRBM development.

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Reliability and Reaction

15. The continuing introduction of single silos has brought improvements in both reliability and reaction time. We believe that ICBMs deployed in single silos can be launched in 5 minutes or less after the execution order is received. Overall reliability of the SS-9 and SS-11 systems is probably somewhat higher than that of older systems.

16. An extensive program of test firings of currently deployed systems has probably improved reliability, in terms of both equipment and training. During the past year, about 100 ICBMs have been launched primarily for purposes of production sampling and crew training. This is the highest yearly total ever observed. Firings included 41 SS-7s, 2 SS-8s, 12 SS-9s, and 45 SS-11s.

Reentry Vehicles

17. Soviet ICBM tests observed during the past year continue to show reentry vehicles (RVs) with low ballistic coefficients and large radar cross sections. There is no evidence to show that the Soviets are trying to develop RVs with higher ballistic coefficients, which are more accurate and less vulnerable to detection and interception. On the other hand, the current Soviet RVs lend themselves to simpler design and packaging of nuclear weapons and may be more adaptable to hardening.

18. We have virtually no evidence to indicate whether current Soviet RVs are designed to withstand nuclear radiation, but we believe that hardening of their RVs for this purpose is within the Soviet state of the art. If they have not already begun to harden, deployment of a US ABM defense would be an added incentive for them to do so.

Accuracy

19. Current Soviet ICBMs use radio-inertial or inertial guidance systems. The SS-9, using radio-inertial guidance, is the most accurate ICBM in the inventory. We estimate that it has a CEP on the order of 0.5-0.75 nautical miles (n.m.). With this accuracy and its large payload, the SS-9 is suitable for attacking hard targets. The SS-11 has a relatively small payload and an estimated CEP. Apparently accuracy was not a critical requirement for the SS-11; we believe that the Soviet objective was to deploy rapidly a large number of survivable weapons for use against relatively soft targets.

20. The Soviets may seek very high accuracies for some future ICBM systems. We have considered their capabilities to achieve accuracies of 0.25-0.5 n.m. Considering the techniques required and probable development times for new systems, we believe that the Soviets could achieve an operational system with a CEP of 0.5 n.m. about 1970 and 0.25 n.m. about 1972. To achieve CEPs in this

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range the Soviets would have to improve their guidance systems, probably introduce midcourse corrections, and design new RVs for either faster reentry or limited terminal guidance maneuver.

Refire

21. We believe that Soviet soft launchers have a refire capability and that on the average two missiles are available for each such launcher. This gives the current force a theoretical refire capability of up to 140 ICBMs some 2-4 hours after the initial launch from soft sites. As soft sites are phased out, this capability will decline. The hardened launchers are not considered capable of refire.

D. ICBM Research and Development

Solid Propellants

22. We believe that there are an adequate number of solid-propellant manufacturing and test facilities within the USSR to support a rather ambitious solid-propellant strategic missile program. We believe that the Soviets have a solid-propellant ICBM under development. They have been testing solid-propellant missiles to ranges of 1,050 n.m. from Kapustin Yar and to 3,100 n.m. from Plesetsk for about 2 years. We believe that these two programs are related [Recently (on 23 October), the Soviets fired a solid-propellant missile from Plesetsk to a range of about 4,750 n.m. We believe that this latest test is related []]

Status of Mobile ICBMs

23. The Soviets have displayed what they claim to be two mobile surface-to-surface missile launchers and have claimed that one of the missiles (Scrooge) has an intercontinental range. We have no information on such a missile, and there is no evidence that it has been flight tested to ICBM range. We doubt that these missiles are prototypes of a mobile ICBM. The USSR, however, may develop a mobile missile to improve the survivability of its ICBM force. The SS-11 could be adapted for a mobile system, but we consider this unlikely. [] would lend itself to mobile deployment but we have no evidence suggesting that this is the Soviet intent.

Future ICBM Development

24. As noted above, evidence of test firings from Plesetsk indicates that the Soviets have a small, solid-propellant ICBM in an advanced stage of development. We estimate that this system will have about the same payload and accuracy as the SS-11. It would be adaptable to mobile deployment but we believe that it will be deployed, at least initially, in hard sites. We doubt that this system could become operational until about mid-1969. It could be deployed in a mobile mode somewhat later.

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25. We have detected no test firings of a new ICBM from Tyuratam for over two and one-half years but we estimate that at least one is in R&D. Until flight test begins, we cannot estimate its precise characteristics but we believe that the most likely possibility would be a large, liquid-propellant ICBM about the size of the SS-9, but having better performance, including some form of improved reentry system. This weapon could be either a modification of the SS-9 or an entirely new missile, and would probably be deployed in hard single silos. We estimate that it could reach IOC in the 1970-1972 period.

26. The Soviets will also probably seek to improve the quality of their existing force by modification of the SS-11 and they may replace it with a new, small liquid-propelled ICBM system. Early improvements to the SS-11 could be aimed at better accuracy or the incorporation of penetration aids or multiple reentry vehicles (RVs). If they elect to replace the SS-11 with a new system, it would probably become operational in the mid-1970's.

Reentry Vehicle Development

27. The Soviets will almost certainly take steps to reduce the vulnerability of their RVs, especially in light of the US decision to initiate ABM deployment. A Soviet decision to develop any particular penetration system will, of course, be affected by their knowledge of the nature of the ABM system the US plans to deploy. They have extensive experience in chaff and electronic countermeasures (ECM) in conjunction with aircraft defense. We believe that they could have exoatmospheric (above 300,000 feet) penetration aids 2 to 4 years after starting a development program. The low ballistic coefficients and high observability of present Soviet RVs decrease the effectiveness of endoatmospheric (below 300,000 feet) penetration aids; a terminal decoy program including a suitable RV would probably require at least 5 years of R&D. We believe that the Soviets would test penetration aids to ICBM ranges and we would probably detect such testing a year or two before IOC.

28. The Soviets are probably well aware of the potential use of radiation kill mechanisms, and the development of RVs with increased hardening to withstand some nuclear effects is probably well within their capabilities. With a program of underground nuclear testing, the Soviets could investigate the response of various materials to X-rays at various energy levels in a simulated exoatmospheric environment and conduct development tests of new hardened warheads.

29. There is no evidence that the Soviets have initiated an advanced RV program. However, they might, regardless of US programs, develop MRVs and multiple independently-targeted RVs (MIRVs), for purposes other than penetration, e.g., to increase the numbers of deliverable warheads. A relatively simple MRV delivery capability probably could be achieved within 12 months after the start of flight testing. Development of either very accurate MIRVs or maneuver-

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able RVs (MaRVs) would involve significantly greater complications, particularly in guidance and control; operational capabilities could probably be achieved about 2 to 3 years after flight testing began. We would expect to detect any of these developments during the flight test phase.

30. If the Soviets undertake early implementation of a MIRV program, we think the SS-9 would be the most likely carrier because of its large payload capability. An SS-9 MIRV system, capable of attacking soft targets, could be attained by 1969; its development would require about a year of flight testing, which we would expect to detect. We consider it unlikely that this program would be undertaken in light of the substantial capability for attacking soft targets represented by the SS-11 ICBM deployment. To give the SS-9 a MIRV capability against hard targets would require the development of some method for accurately delivering several independent RVs having a combined weight of about 9,000 pounds. Accuracy would be the pacing item and would probably require improvements in boost-phase guidance and the addition of a radio midcourse correction system. Even if such a MIRV program were to be initiated in the very near future, we doubt that IOC could be achieved before 1972. We would expect to detect testing of such a system 2 to 3 years prior to its IOC. Development of a MaRV would take at least as long.

E. Force Levels and Composition 1970-1977

31. Soviet decisions as to the best mix of weapons and the proper force levels have become increasingly difficult, not only because of the growing complexity of the threat they face, but also because of the broadening range of options open to Soviet planners. The size and composition of Soviet strategic forces in the 1970's are most likely to reflect a compromise which will embody several of the options now open to Soviet planners. The most likely effect of such a compromise on ICBM programs would be a shift in emphasis from numbers to qualitative improvements—though this would not necessarily preclude additional deployment. Thus, although the Soviets could deploy several thousand ICBM launchers by the mid-1970's, we do not believe that they will seek a substantial numerical superiority.

32. In estimating the size of the ICBM force for the 1970's, we must use a fairly wide range rather than a precise figure—particularly since, for a period so far ahead, much will depend on the interplay between US and Soviet decisions taken in the interim. The low end of the range represents the minimum figure that can be postulated on the basis of our present evidence. We think that ICBM forces falling anywhere within the ranges estimated below would meet a broad Soviet criterion for an assured destruction capability and, hence, a credible deterrent.

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33. We estimate that the Soviet ICBM force will number something more than 1,000, but is not likely to exceed 1,300 launchers by mid-1972; by mid-1977 we estimate a force numbering more than 1,000, but not exceeding 1,500 launchers. A force near the low side, say 1,100, would reflect a deliberate Soviet decision, for political reasons, to hold the number of launchers at a level about equal to that of the US.⁴ It would imply some phaseout of older missiles. It would also imply a Soviet decision to emphasize qualitative improvements rather than a simple increase in numbers of launchers. If they opt for the low side, the single-silo launchers for the SS-9 and SS-11 would continue to make up the bulk of the force. A new solid-propellant ICBM would probably be brought into service in the next few years. A new large, liquid-propellant ICBM may also be deployed in hard single silos sometime later in the period. The Soviets will probably undertake qualitative improvements to increase weapon effectiveness and to counter US ABM defenses; such improvements could include better accuracy, more sophisticated RVs, penetration aids, MRVs, or MIRVs.

34. A force toward the high side of our estimate would have many of the features of the smaller force, including the qualitative improvement of existing systems. It would, by the latter part of the period, include some 700 new launchers, requiring a deployment program roughly comparable in size to the current SS-9 and SS-11 programs combined. It would probably also involve retention of the SS-7 hard launchers for several years and the introduction of one or more new ICBM systems. Deployment on this scale would consist primarily of small ICBMs deployed in single silos; some of the deployment may be in mobile launchers.

III. MILITARY APPLICATIONS IN SPACE

35. Throughout the period of the estimate the Soviets will experiment with a variety of space systems which could be used for military purposes. New military space applications will be introduced as Soviet technology advances and as requirements for such systems are developed. The high priority evident in the reconnaissance satellite program will probably be extended to other selected military support systems which the Soviet leaders decide are essential; these will probably include systems for improved communications, weather observation, and navigation.

36. Evidence of Soviet interest in orbital bombardment systems dates from Khrushchev's remarks in early 1962 and subsequent references to "global rockets" and "orbital missiles." These can be interpreted to refer to either or both of two concepts which have come to be called "fractional orbit bombardment system"

⁴ For the position of Maj. Gen. Jack E. Thomas, the Assistant Chief of Staff, Intelligence, USAF, see his footnote to Conclusion F.

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**SOVIET STRATEGIC
ATTACK FORCES**

THE PROBLEM

To estimate the strength and capabilities of Soviet strategic attack forces through mid-1970 and to estimate general trends in those forces over the next 10 years.

CONCLUSIONS

A. The primary objectives of Soviet strategic policy have been to achieve a more formidable deterrent and to narrow and eventually to overcome the US lead in capabilities for intercontinental attack. Toward this end the Soviets have built strategic forces, both offensive and defensive, which provide a large assured destruction capability and important damage-limiting capabilities as well. While they have only begun to narrow the gap in submarine-launched ballistic missiles and remain inferior in heavy bombers, the Soviets will shortly overcome the US lead in numbers of intercontinental ballistic missile (ICBM) launchers. Current programs will bring further improvements in the USSR's strategic position, already the most favorable of the postwar period. But the Soviets face in the future a strategic situation changed and complicated by projected improvements in US forces—Poseidon, Minuteman III, and the antiballistic missile system—that threaten to erode their relative position.

B. In deciding upon the future size and composition of their strategic forces the Soviets are almost certainly exploring a number of alternatives. They are evidently interested in strategic arms control as an option that could conserve economic resources and protect their improved strategic position. In the absence of an arms control agreement, we believe that they will continue the arms competition with the US, seeking to maintain and if possible improve their relative strategic

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position. In any case, they will probably give increased attention to qualitative improvements, particularly those designed to enhance survivability and capacity to penetrate defenses.

C. *ICBMs.* The great improvement in the USSR's strategic position results primarily from the rapid and extensive ICBM deployment of the past few years. The Soviet ICBM force now has about 900 operational launchers and we believe that it will surpass the US force in numbers by 1970. The Soviets have begun deployment of a small solid-propellant ICBM, they probably are developing a new large liquid-propellant system, and they probably will develop a mobile ICBM system. In addition, they are flight-testing multiple reentry vehicles (MRVs).

D. We believe that for the period of this estimate the Soviet force goal will lie somewhere between 1,100 and 1,500 ICBM launchers.¹ If it lies near the low side, the Soviet ICBM force would probably peak at a higher level until older launchers were phased out. Such a force would probably embody considerable qualitative improvements including better accuracy, more sophisticated reentry vehicles such as MRVs and multiple independently-targeted reentry vehicles (MIRVs), and possibly penetration aids. A force toward the higher side of our estimate would also include qualitative improvements, and it would rely in part upon larger numbers to attain improved capabilities.

E. *Space Weapons.* At the time of our last estimate the Soviets were conducting extensive flight tests which we believed related to development of a fractional orbit bombardment system (FOBS). Developments since that time have lowered our confidence that we understand the intended purpose of the system under test; the Soviets may be trying to develop a FOBS, a depressed trajectory ICBM, or perhaps a dual system which could perform both missions. Until our evidence is more conclusive, we are unable to make a confident estimate as to the type of system being developed, when it could reach initial operational capability (IOC), or how it may be deployed. We continue to believe it unlikely that the Soviets will develop a multiple orbit bombardment system.

¹ For the position of Maj. Gen. Jammie M. Philpott, the Acting Assistant Chief of Staff, Intelligence, USAF, and Maj. Gen. Wesley C. Franklin, for the Assistant Chief of Staff for Intelligence, Department of the Army, see their footnote to paragraph 33.

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F. *Medium-Range Ballistic Missiles/Intermediate-Range Ballistic Missiles (MRBM/IRBM)*. There has been little change in the size of the MRBM/IRBM force, which still stands at about 700 launchers. We estimate that new MRBMs and IRBMs will supersede present systems within the next 10 years. The Soviets will continue to maintain massive strategic forces against Eurasia, but the introduction of improved missiles may result in some decrease in numbers. We believe that the Soviets are developing and will deploy, in both a fixed and a mobile configuration, a new solid-propellant MRBM (designated SS-14) of about 1,500 n.m. range which could reach IOC in a year or two. We estimate that they will also develop a solid-propellant IRBM with a range of about 3,000-3,500 n.m., and that it will reach IOC in 1970-1971. It will probably be deployed in both fixed and mobile launchers and with its extended range will provide more flexible coverage of Eurasian targets.

G. *Submarine-Launched Missiles*. The Soviets have clearly embarked upon a high priority program to improve and expand their ballistic missile submarine force. We estimate that 6, possibly 7, of the 16-tube Y-class submarines have now come down the ways and production of this class may be stepped up soon. We believe that the Soviets are building toward a ballistic missile submarine force that will confront the US with a threat roughly comparable to that which the Polaris force presents the USSR. They could reach that position by the mid-1970's, when they will probably have some 65-80 ballistic missile submarines, of which 35-50 will be Y-class types.

H. *Long-Range Aviation*. Attrition and retirement of older models will gradually reduce the Soviet heavy bomber force. The medium-bomber force will probably also decline as Badgers are phased out, but at a slower rate than we estimated last year. The introduction of a new air-to-surface missile into the Badger force suggests that the Soviets intend to extend the useful life of some of those aircraft for a few more years. We still believe that the Soviets are unlikely to introduce a follow-on heavy bomber; they may introduce a follow-on medium if the Blinder does not satisfy their future requirements.²

² For the position of Maj. Gen. Jammie M. Philpott, the Acting Assistant Chief of Staff, Intelligence, USAF, see his footnotes to Section VI.

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DISCUSSION

I. TRENDS IN POLICY AND DOCTRINE

1. The most important issues of Soviet military policy concern the strategic balance between the US and the USSR. The goals of Soviet strategic weapons programs were set at a time when the US enjoyed such a superiority in intercontinental delivery systems as to put the USSR at a political and psychological disadvantage. The aim of Soviet strategic policy, therefore, has been to achieve a more formidable deterrent and to narrow and eventually to overcome the US lead. Toward this end, the Soviets have built strategic forces, both offensive and defensive, which provide a large assured destruction capability and important damage-limiting capabilities as well, and they have substantially reduced the US lead in numbers of intercontinental delivery vehicles.

2. The great improvement in the USSR's strategic position results from the buildup of Soviet strategic forces begun by Khrushchev several years ago. The new leaders have made some decisions as to the size and composition of their strategic forces, but they have generally followed the strategic policies and programs that they inherited. In the future, however, they face a strategic situation significantly changed from that which led to present Soviet policies. Projected improvements in US strategic forces—Poseidon, Minuteman III, and the antiballistic missile (ABM) system—threaten to erode their relative position. Now the Soviet leaders are confronted with the necessity for new decisions on the future size and composition of their strategic forces. Other military requirements and the growing needs of the general economy are among the factors which the leaders must consider in making these decisions.

3. Under the collective leadership, military expenditures have continued to rise, primarily as the result of the continuing development and large-scale deployment of strategic weapons, which account for about half of the total military expenditures. The requirements of these programs for scarce high-quality resources of the sort needed to sustain economic growth have aggravated the impact of defense spending on the economy. Now, events in the Far East and in Europe have posed new military requirements which probably will result in a substantial increase in the strength of Soviet theater forces. Thus the perennial problem of resource allocation promises to sharpen. Economic considerations almost certainly were among the principal reasons for the Soviet decision to discuss arms control with the US.

4. Nevertheless, the economic considerations contributing to the Soviet decision are probably no more compelling than the strategic considerations. Considering US plans for improvements in its strategic forces, the Soviets probably recognize that a considerable sustained effort would be necessary to maintain the relative position they have now achieved. They may also be concerned

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lest the end of the Vietnam War enable the US to divert additional resources to its strategic forces. Finally, they may reason that further increments to their strategic forces would have little effect on the relationship between the US and the USSR so long as the US maintained its large, second-strike assured destruction capability. If these arguments were to prevail in the USSR, the Soviets would probably seek an agreement that preserved their present strategic relationship with the US.

5. It is too early to assess the full implications of the Czech crisis for Soviet policy toward arms control. The Soviets still have the same basic economic and military incentives; indeed, it is possible that the new military requirements generated by the Czech crisis have added to those incentives. Moreover, the present Soviet line seems to be that the Czech crisis is an internal Communist Bloc affair that should have no effect on the USSR's relations with the US. It is possible, therefore, that the Soviets will seek to proceed with arms control talks. At a minimum, however, the Czech crisis has delayed the opening of talks with the US and has dampened the prospects of any real progress toward strategic arms control in the near term.

6. In any case, the Soviet leaders cannot base their strategic planning on the possibility of strategic arms control and will almost certainly explore other alternatives. At a minimum, they might consider a policy of deterrence aimed only at maintaining a large assured destruction capability. Or they might consider a try for strategic superiority of such an order that it could be translated into significant political gain. We consider it highly unlikely that the Soviets will select either of these courses of action. The first, that of unilateral deescalation, would involve a decision to sacrifice the hard-won gains of recent years. The second would involve economic sacrifices that are probably unacceptable to the present leadership and would almost certainly provoke a strong US reaction. We believe, therefore, that in the absence of a strategic arms control agreement, the USSR will continue the arms competition with the US with the object of maintaining and if possible improving its relative strategic position.

7. For several years, the Soviets have given the highest priority to the effort to overcome the US lead in numbers of intercontinental delivery vehicles, particularly in intercontinental ballistic missiles (ICBMs). By 1970, the Soviets will probably surpass the US force in numbers of ICBM launchers but they will remain inferior in submarine-launched ballistic missiles (SLBMs) and heavy bombers. To maintain an assured destruction capability in the strategic situation that is emerging, qualitative improvements, particularly those related to survivability and capacity to penetrate defenses, become more important. There will undoubtedly be pressures for a continuing enlargement of the ICBM force, and it may continue to grow. But having attained rough numerical parity with the US in ICBMs, the Soviets will probably give increased atten-

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tion to other options designed to enhance the survivability and effectiveness of their strategic attack forces.

II. INTERCONTINENTAL BALLISTIC MISSILES

A. Recent Deployment Activities

8. The growth in the Soviet ICBM force continues at about the same pace as in previous years, but there have been several significant developments within the structure of the force. We believe that the construction starts of silos for the SS-9 will continue at least for awhile but that the SS-11 program may be approaching its planned level. We believe deployment of sites for the small, solid-propellant SS-13 began in the summer of 1967 and has been proceeding at a very slow rate.

B. Current Deployment

9. We estimate the present strength of the Soviet ICBM force to be about 900 operational launchers. Of these, some 500 are for the small SS-11 and about 150 are for the large SS-9. Both of these systems are deployed in dispersed, single silos. Older systems, which are deployed in soft sites or triple-silo hard sites, account for the remainder.

10. *Single-Silo Deployment.* In addition to the operational force, about 130 launchers for the SS-11 and about 70 for the SS-9 are estimated to be in varying stages of construction. We expect that all of those will be completed by mid-1970. Although the SS-13 is still in the flight test phase, we estimate that about 20 of the launchers for that system could be completed by mid-1969.

11. Since we believe that the initiation of construction of silos for the SS-13 has been proceeding at a very low rate, and probably at only one complex, we have some doubts about the future of that program. This deployment pattern is highly unusual when compared to earlier programs. Deployment of all the presently operational systems was undertaken simultaneously at several complexes and proceeded rapidly, concurrently with their development. It may be that as the Soviet ICBM force approaches parity with the US force there is less urgency in deployment. In these circumstances, the Soviets may have decided upon a modest initial deployment while development was still underway.

12. It is possible, however, that technical reasons have led the Soviets to modify their plans for the SS-13. In terms of our estimate of its performance characteristics it offers little, if any, advantage over the SS-11 in most respects. For this reason, the Soviets may have decided to limit field deployment of the system to just a few sites. Or they may have found that modifications

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were required to improve the missile's performance, possibly modifications that necessitated changes in the launch facility; they may be waiting until the problem is resolved before proceeding further with deployment in the field. It is also possible that the Soviets intend that future deployment of the SS-13 will be in a mobile configuration rather than in fixed sites.

On the other hand, the slow rate of construction starts for the SS-13 may be based upon political considerations. Soviet decisions as to future ICBM deployment and force levels may have been postponed until the possibility of strategic arms control has been explored in talks with the US.

13. The SS-7 and SS-8 second-generation launchers remain operational, but we believe that the four first-generation SS-6 launchers have been phased out of the force. We believe that the SS-7 launchers will be retained in the force at least through mid-1970, but that phase-out of the SS-8 launchers will have begun by that time.

C. Force Levels and Composition to Mid-1970

14. Our estimate of the Soviet ICBM force over the next two years is based on our estimate of the number of launchers now operational or under construction, the estimated time to bring launch groups to operational status, and the filling out of launch groups already started. We are virtually certain that there are no more than 25 operational ICBM complexes in the USSR. We allow for the possibility that there are a few SS-9 and SS-11 silos under construction of which we are not aware.

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ESTIMATED OPERATIONAL ICBM LAUNCHERS

	1 SEPTEMBER 1968	Mid-1969	Mid-1970
Soft			
SS-7	128	128	128
SS-8	14	14	0-14
Subtotal	142	142	128-142
Hard (Triple Silo)*			
SS-7	69	69	69
SS-8	9	9	0-9
Subtotal	78	78	69-78
Hard (Single Silo)*			
Large (SS-9)*	156	198-222	228-240
Small (SS-11)*	520	620-650	680-720
Small (SS-13)	0	0-20	30-50
Subtotal	676	818-892	938-1,010
TOTAL *	896	1,038-1,112	1,135-1,230

* We believe that the silos in the triple silo sites are so close to each other that they represent one aiming point per site. We believe that single silos are located so far apart as to represent separate aiming points. We believe that all hardened ICBM launchers deployed in the field are designed to remain completely operable when exposed to overpressures on the order of 200-400 psi.

^b It is possible that the Soviets could fit SS-9 and SS-11 silos for emergency launch at some stage in the fitting out period after they are externally complete. In the case of the SS-11, the launch control facility for the group would have to be complete and operational. Such a procedure would provide a launch capability up to three months earlier than otherwise. We think it unlikely they would do this unless they foresaw a crisis situation in that period.

^c We estimate that there is a silo and a control facility at each of the SS-9 and SS-11 complexes which serves as a crew training facility and is not a part of any group in the complex. Additionally, the Soviets have about 45 completed launchers and about 15 others under construction at Tyuratam and Plesetsk which we associate with ICBM development. We believe that most of them, as well as the training silos at the SS-9 and SS-11 complexes, could be readied to fire at the US. We are unable to make any valid estimate of the time required to ready them, their reaction times, or the availability of missiles for them.

D. Operational Capabilities of the Force ³

15. From the history of Soviet ICBM flight testing and analysis of the current state-of-the-art, we now estimate that the overall ICBM force has a somewhat higher reliability rate than we have estimated previously. The one exception is the SS-8 which now appears to be less reliable than we had estimated.

16. Continuing analysis leads us now to estimate that the SS-9 has a circular error probability (CEP) of about 0.5 nautical miles (n.m.) using radio-inertial

³ See TABLE I for our estimate of characteristics and performance data for Soviet ICBMs.

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guidance and about 0.75 with inertial guidance alone. Thus, it is the most accurate ICBM in the Soviet inventory. With this accuracy and its large payload, the SS-9 is suitable for attacking hard targets. The rest of the missiles in the force have CEPs of 1.0 n.m. or greater. The SS-11 with its lesser accuracy, [] and its lighter payload would probably be used against relatively soft targets.

17. We believe that Soviet soft ICBM launchers have a refire capability and that on the average two missiles are available for each such launcher. We believe that the Soviets do not plan to refire from hard launchers.

18. In assessing the feasibility of developing an initial strike counterforce capability, Soviet planners might consider an attempt to achieve a nuclear pin-down of US missile forces. This tactic might offer advantage as part of a deliberate surprise or preemptive attack on the US. Considering the manifold uncertainties involved in such an attack, however, we believe that the Soviet leaders could have no assurance that the USSR would not receive unacceptable damage in return. Nevertheless, in an effort to optimize their damage-limiting capability under the various circumstances in which a nuclear war might erupt, the Soviets may include this tactic in their planning for the employment of their strategic forces.

E. ICBM Research and Development

New Systems

19. The solid-propellant SS-13 [] is the only new ICBM that we have identified in flight tests. There have now been 9 firings of the SS-13 to 3,100 n.m. and 3 to 4,700 n.m., and we expect it to be tested to longer ranges before being deployed. The SS-13's reliability during the test program has been somewhat low, possibly because of Soviet inexperience with solid-propellant technology, but we believe that the system will be about 65 percent reliable by the time it is deployed. We estimate that the SS-13 will be capable of carrying a reentry vehicle (RV) weighing [] to about 5,500 n.m. when it is ready to become operational; it will probably achieve initial operational capability (IOC) in fixed sites about mid-1969 or shortly thereafter. The IOC of the SS-13 in a mobile mode probably will come somewhat later.

20. Based upon the Scrooge transporter-erector-launcher (TEL) which the Soviets have been displaying since 1965, we believe that they are developing a mobile missile system which could be either an ICBM or an intermediate range ballistic missile (IRBM). Our analysis of the TEL indicates that it is too small for the Savage which we believe to be the prototype for the SS-13. It could contain a full range ICBM, however, and this may, in fact, be the case. We believe it more likely that the missile will be 2 of the 3 stages of the SS-13 in which case it would have a range of about 3,000-3,500 n.m. A missile of this

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range would fit the Soviet definition of an ICBM: i.e., a missile with a range of over 5,000 km (2,750 n.m.). It would be at the upper range limit of our definition of an IRBM and at the lower limit of our ICBM definition. However, a missile with a range on the order of 3,000 n.m. would have to be deployed above the Arctic Circle in the Soviet northeast if it were to provide any significant coverage of US targets. The logistic and operating problems posed by such deployment would be formidable. We think it is highly unlikely that the Soviets would develop a system for attack on the US which would pose so many problems and such great expense. We consider, therefore, that the chances are better than even that the missile apparently under development is an extended range IRBM for use against Eurasian targets; this subject is addressed in the later section dealing with Soviet medium and intermediate range ballistic missile (MRBM/IRBM) forces.

21. If this missile system is, in fact, an extended range IRBM, it would indicate that all three stages of the SS-13 will be undergoing test in mobile systems since we have good evidence that the mobile SS-14 uses two stages of the SS-13. Assuming these test programs are successful, the development of a mobile version of the SS-13 ICBM would require little more than adaptation to a suitable TEL and we estimate that such development will occur.

22. We believe that the Soviets are developing a large, liquid-propellant ICBM which could be ready for deployment in the 1970-1972 period. It will probably have greater accuracy and possibly a larger payload than the SS-9, and may be the best candidate for carrying a new sophisticated reentry system. It will probably be deployed in hard silos, and may be suitable for retrofit into SS-9 silos.

23. Another research and development (R&D) program which may relate to a new weapon system is underway at the Plesetsk Missile and Space Center. The limited amount of data gained does not allow us to understand clearly what type of system is undergoing test. [

Based on the data presently available, it is not possible to determine whether these events are the early test of a space weapon system or a ballistic missile system.

Future ICBM Development

24. In addition to the ICBM systems now under development, the Soviets may undertake development of other advanced ICBM systems. They will

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probably seek to improve the quality of their existing force by modification of the SS-11, and they may replace it with a new, small, liquid-propellant ICBM system. They may also develop a small solid-propellant system as a follow-on to the SS-13, particularly if that system fails to measure up to their expectations; this system may be developed for mobile deployment.

Reentry Vehicles

25. Soviet ICBM tests observed during the past year continue to show RVs with low ballistic coefficients and large radar cross sections. There is no evidence to show that the Soviets are trying to develop RVs with higher ballistic coefficients, which are more accurate and less vulnerable to detection and interception. On the other hand, the current Soviet RVs lend themselves to simpler design and packaging of nuclear weapons and may be more adaptable to hardening.

26. The Soviets are aware of the potential use of radiation kill mechanisms and the development of RVs hardened to withstand some nuclear effects is almost certainly within their capabilities. With a program of underground nuclear testing, the Soviets could investigate the response of various materials to X-rays at various energy levels in a simulated exoatmospheric environment and conduct development tests of new hardened warheads.

27. The Soviets will almost certainly take steps to reduce the vulnerability of their RVs, especially in light of the US decision to initiate ABM deployment. We believe that they could have exoatmospheric penetration aids (for use above 300,000 feet) a year or so after initiation of flight testing. A terminal decoy program, effective down to very low altitudes, including a suitable RV, would probably require two to three years of flight testing. We believe that the Soviets would test penetration aids to ICBM ranges and we would probably detect flight testing a year or two before IOC.

28. We now have evidence indicating that the Soviets are working toward some form of advanced reentry system. On 23 August and 11 September, ICBMs launched from Tyuratam into the Kamchatka Peninsula [

] showed three objects reentering the atmosphere at the end of the flight and telemetry indicates that all survived to impact. The system tested consisted of an SS-9 first and second stage with a 12,500 pound class payload consisting of three RVs which impacted at a range of approximately 3,400 n.m. Although these events are indicative of multiple reentry vehicle (MRV) testing, it is too early in the test program to assess the ultimate operational configuration. The evidence, however, is not incompatible with tests leading to a multiple independently-targeted reentry vehicle (MIRV) capability. We do not believe these tests involved penetration aids.

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29. We believe that the Soviets could achieve an operational MRV employing three RVs in a modified SS-9 payload by late 1969. This RV system, as now observed, would degrade the overall accuracy and reliability of the SS-9 system; the SS-9 equipped with three warheads may still be effective against a single hard target. If this is a program aimed at MIRV development, we estimate that the Soviets could achieve IOC with a MIRV system suitable for attack against soft targets by 1970. A MIRV system capable of attacking hard targets such as Minuteman silos could probably not reach IOC until 1972.

Accuracy

30. The Soviets still do not have an active flight test program for the type of RV (i.e., one with a high ballistic coefficient) considered essential for very high accuracy without terminal guidance. In spite of their trend toward low-ballistic-coefficient RVs, the Soviets may seek very high accuracies for some future ICBM system. Considering their present state-of-the-art, and the techniques and probable development times required, we believe that, if they elected to do so, the Soviets could have a new ICBM system with a CEP of 0.5 n.m. if introduced about 1970 and 0.25 n.m. if introduced about 1972. To achieve CEPs on this order the Soviets would have to improve their guidance systems, probably introduce midcourse corrections, and design new RVs for either faster reentry or limited terminal guidance. We believe that we would detect efforts to improve accuracy during the flight test phase.

F. Force Levels and Composition 1971-1978

31. We believe that for the past few years rough numerical parity with the US has been the minimum objective of Soviet ICBM deployment programs. The momentum of current programs will carry the Soviet force past this goal within the next year. As we have noted above, we estimate that the Soviets now have about 900 ICBM launchers operational and about 200 under construction; we estimate that in mid-1970 the Soviets could have as many as 1,230 operational launchers. We estimate that the 220 older launchers in the force will be phased out during the period of this estimate, but that most of them probably will be kept in service at least through mid-1970.

32. For the 1971-1978 period, the Soviets will have the option of stabilizing their ICBM force at a numerical level about equal to that of the present US force, or of going for a substantially larger number. The force goal they set will depend on their assessment of the force needed to meet their strategic planning requirements, and upon their judgment as to the best means of compensating for programmed qualitative improvements in US strategic forces. It will also be influenced by their assessment of the risk of stimulating a large new missile deployment in the US. Moreover, the Soviet decision will be made not in isolation but in the context of Soviet strategic forces as a whole, both offensive and defensive.

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33. We estimate, therefore, that for the period of this estimate the Soviet force goal will lie somewhere between 1,100 and 1,500 ICBM launchers.⁴ Forces toward either the low or the high side of our estimate would have certain common features. When the phase-out of older systems is completed, they would be composed almost entirely of hard, dispersed single silos, but they could include some mobile launchers. Launchers for the SS-9 and the SS-11 would make up the bulk of either force, but the higher option would mean the construction of 400-500 new launchers for one or more new ICBM systems, including a large liquid-fueled ICBM, and possibly a new, small system with either solid or liquid propellants. A force toward the low side would probably embody considerable qualitative improvements including better accuracy, more sophisticated RVs such as MRVs and MIRVs, and possibly penetration aids; it could also include a new large, liquid-fueled ICBM. A force toward the high side would also include qualitative improvements, and it would rely in part upon larger numbers to attain improved capabilities.

III. MILITARY APPLICATIONS IN SPACE

34. Throughout the period of this estimate the Soviets will experiment with a variety of space systems which could be used for military purposes. New military space applications will be introduced as Soviet technology advances and as requirements for such systems are developed. The high priority evident in the reconnaissance satellite program will probably be extended to other selected military support systems which Soviet leaders consider essential; these will probably include systems for improved communications, weather observation, and navigation. There has already been a significant increase in the use of applied satellites in recent years; military entities probably are using the Molniya communication satellites and are almost certainly receiving some benefits from weather and navigation satellites.

35. At the time of our last estimate, the Soviets were conducting an intensive flight test program of a vehicle which we have designated the SS-X-6. In the initial tests, the SS-X-6 was fired into Kamchatka on a flight profile with a low apogee of 120 n.m. suggesting to us at that time the development of a depressed trajectory ICBM. (The normal apogee for this range is about 400-500 n.m.) [

] In two of these tests, the RV was retrofired and did not follow a

⁴ Maj. Gen. Jammie M. Philpott, the Acting Assistant Chief of Staff, Intelligence, USAF, and Maj. Gen. Wesley C. Franklin, for the Assistant Chief of Staff for Intelligence, Department of the Army, would delete the first sentence and substitute the following:

We believe that for the period of this estimate the Soviet force goal will lie somewhere between 1,200 and 1,500 ICBM launchers providing the USSR operationally deploys a sizable number of ICBMs with multiple reentry vehicles. Otherwise, and particularly in view of the number of targets in the US and the planned US ABM capability, the Soviet Union probably will have considerably more than 1,500 launchers by the late 1970's. A program which added only 100 launchers per year beyond those already identified would exceed 1,800 by 1978.

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SOVIET STRATEGIC ATTACK FORCES

THE PROBLEM

To estimate the strength and capabilities of Soviet strategic attack forces through mid-1971 and to estimate general trends in those forces over the next 10 years.

FOREWORD

Our estimates of Soviet military capabilities are organized on lines which the intelligence community and users of the estimates have for some years found useful. This organization is in terms of the mission to be performed rather than of administrative subordination. Thus, for example, the elements of the strategic attack forces are variously subordinated, the pertinent missiles to the Strategic Rocket Forces, the bombers to Long Range Aviation, and the missile submarines to the navy. This method of treating Soviet forces is basically the same as that being used by DOD in US military planning, although there are differences in detail. Moreover, within the category of strategic attack forces, which is the subject matter of this estimate, we have been accustomed to distinguish between forces for intercontinental and those for peripheral attack.

It should be recognized, however, that this organization is somewhat arbitrary. The line of distinction between the various categories is necessarily a fuzzy one, and is becoming more so. For example, cruise missile submarines (which we deal with as general purpose force weapons) can, if the occasion warrants, be used to attack strategic targets near enemy coasts. Strategic ballistic missiles can be employed in sup-

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port of theater force operations. And fighter bombers or missiles of less than MRBM range are plainly suitable for attacking strategic targets in Eurasia.

Similarly, as shifts in the international situation occur or as a war progresses, the assignment of a weapon to a particular category can lose validity. The need of the hour dictates that any weapon system that can fruitfully be brought to bear on a specific target should be used. Thus, today's strategic weapon may be tomorrow's tactical one; witness the only combat use to which B-52s have thus far been put. Accordingly, though we continue to treat the various Soviet weapon systems within the categories already established, it must be recognized that any given system may have other uses as well.

CONCLUSIONS

Soviet Strategic Policy

A. For several years, the primary objectives of Soviet strategic policy have evidently been to build a more formidable deterrent and to overcome the US lead in capabilities for intercontinental attack. Today, while the Soviets remain inferior in numbers of intercontinental delivery vehicles, they have overtaken the US in numbers of operational ICBM launchers. Current programs will bring further improvements in the USSR's strategic position, already the most favorable of the postwar period. But the Soviets face in the future a strategic situation changed and complicated by projected improvements in US forces and by the threat of a hostile China with an emerging nuclear capability.

B. We can make only the most general conclusions as to the course of Soviet strategic policy over the 10 year period of this estimate. In the absence of an arms control agreement, Moscow will almost certainly continue to strengthen its strategic forces, giving first priority as in the recent past to the forces for intercontinental attack and for strategic defense. Although we have no direct evidence of Soviet force goals, we believe that the Soviets will seek as a minimum something

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that they can regard as rough parity with the US; it is equally possible that they will seek some measure of superiority.¹

Forces for Intercontinental Attack

C. The Soviets have built forces for intercontinental attack capable of inflicting heavy damage on the US even if the US were to strike first. Most of the ICBMs and all of the submarine-launched ballistic missiles are best suited for attacks on soft targets. The SS-9 is the only ICBM with the combination of payload and accuracy to attack hard targets effectively, but in its present numbers with single warheads it could attack no more than a small percent of the US ICBM force. The USSR's capability to attack hard targets, however, is likely to increase considerably over the next 10 years. The Soviets will probably introduce ICBMs of greater accuracy. They are now testing multiple re-entry vehicles on the SS-9 and though the purpose of these tests is unclear, we believe the Soviets will introduce MIRVs² capable of attacking hard targets. If the multiple re-entry vehicle tests are aimed at the development of a simple MRV, such a system could reach IOC late this year. If on the other hand they are aimed at the development of a MIRV system designed to attack Minuteman silos as described in paragraph 29 of the text, IOC could not be achieved before late 1970. A highly accurate MIRV system or one employing more than three RVs probably could not be developed before 1972, although its IOC might be delayed until as late as the mid-1970's.

D. *ICBMs.* In the recent past, the Soviets have sought to improve their strategic position by a rapid buildup in the numbers of ICBM launchers. In the strategic situation that is emerging, qualitative improvements—particularly those related to accuracy, survivability, damage limitation, and the ability to penetrate defenses—become more important. Moreover, the number of launchers will probably become

¹ For the views of Mr. George C. Denney, Jr., Acting Director of Intelligence and Research, Department of State; Vice Adm. Noel Gayler, the Director, National Security Agency; and Maj. Gen. Jammie M. Philpott, the Assistant Chief of Staff, Intelligence, USAF, see their footnotes to paragraph 12.

² See the Glossary for definition of MRV and MIRV. In this estimate, the words "multiple re-entry vehicles" include both MRVs and MIRVs.

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less significant in Soviet calculations than the numbers and kinds of re-entry vehicles. Considering current deployment activity and the probable phase out of older launchers, a Soviet ICBM force of some 1,300 launchers appears to be a minimum. Depending upon its composition and the extent to which it is supplemented by other weapons, such a force could in our view be consonant with a Soviet policy aimed either at rough parity or at some margin of advantage. Other factors, however, such as concern for survivability, a Soviet decision not to deploy MIRVs, a substantial delay in Soviet MIRV deployment, a try for superiority, or even the momentum of military programs could push these figures upward by some hundreds of launchers. We cannot now estimate the maximum size of the force which might result from such pressures.³

E. *Space Weapons.* There have been extensive flight tests which we think are related to development of a fractional orbit bombardment system (FOBS), a retrofired depressed trajectory ICBM, or perhaps a dual system to perform both missions. We have observed no testing since October 1968. We still think the chances are better than even that some version of the system will be deployed. Until our evidence is more conclusive, however, we cannot make a confident estimate as to the type of system being developed, when it could become operational, or how it might be deployed.

F. *Nuclear-Powered Ballistic Missile Submarines.* Production of the 16-tube Y-class ballistic missile submarine continues; some five or six are now in commission. In addition, the Soviets may be developing a 3,000 n.m. submarine-launched ballistic missile. We continue to believe that the Soviets are building a nuclear-powered ballistic missile submarine force which will be roughly comparable to the US Polaris fleet by the mid-1970's.

³ For the views of Mr. George C. Denney, Jr., Acting Director of Intelligence and Research, Department of State; Rear Adm. Daniel E. Bergin, for the Acting Director, Defense Intelligence Agency; Brig. Gen. DeWitt C. Armstrong, III, for the Assistant Chief of Staff for Intelligence, Department of the Army; Rear Adm. Frederick J. Harlinger, II, the Assistant Chief of Naval Operations (Intelligence), Department of the Navy; and Maj. Gen. Jammie M. Philpott, the Assistant Chief of Staff, Intelligence, USAF, see their footnotes to paragraph 41.

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G. *Heavy Bombers.* The Soviets still have about 200 heavy bombers and tankers in operation. We have no evidence that any are currently being produced for Long Range Aviation, and we consider it unlikely that a new heavy bomber will enter service. Hence, by 1979 the heavy bomber force will probably be largely deactivated.⁴

Forces for Peripheral Operations

H. Soviet strategic forces for peripheral operations consist primarily of MRBMs, IRBMs, medium bombers, and diesel-powered ballistic missile submarines. In addition, the Soviets are probably deploying some short-range ballistic missiles and some ICBMs against targets in Eurasia. These forces are arrayed for the most part against Europe, and in massive strength—an emphasis that will probably continue. The conflict with China, however, has posed new requirements for strategic forces. These can be met to some extent by retargeting existing systems (e.g., bombers and ICBMs), but there will probably be some additional deployment of strategic missiles against China.

I. Within the period of this estimate, the MRBMs and IRBMs now in service will probably be completely replaced. Our evidence of new missile development is scanty and inconclusive, but a 1,500 n.m. solid-propellant missile and a missile of longer range (up to 3,000 n.m.) seem the likeliest possibilities. We project an MRBM/IRBM force of some 400-700 launchers, supplemented by additional short-range missiles and ICBMs. The medium bomber force will probably decline from its present level of some 700-750 aircraft.⁵ It seems highly unlikely that any new diesel-powered ballistic missile submarine will be built.

⁴ For the views of Maj. Gen. Jammie M. Philpott, the Assistant Chief of Staff, Intelligence, USAF, see his footnotes to paragraphs 61 and 62.

⁵ For the views of Maj. Gen. Jammie M. Philpott, the Assistant Chief of Staff, Intelligence, USAF, see his footnote to Section III D.

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DISCUSSION

I. SOVIET STRATEGIC POLICY

1. The primary objectives of Soviet strategic policy evidently have been to build a more formidable deterrent and to narrow and eventually to overcome the US lead in capabilities for intercontinental attack. These goals were probably set in the wake of the Cuban missile crisis, when the US enjoyed such superiority as to put the USSR at a political and psychological disadvantage. At that time, Soviet leaders probably calculated that forces poised against Europe were adequate for any likely contingency and that the smoldering dispute with China posed no new requirements beyond a strengthening of the border guard. Thus, the forces for intercontinental attack and for strategic defense could be given first priority.

2. As a result, the Soviets have wrought a considerable change in the strategic situation. There can be no doubt today concerning the credibility of the Soviet deterrent. And while the Soviets remain inferior in total numbers of intercontinental delivery vehicles, they have overtaken the US in numbers of operational ICBM launchers. Thus, in only five or six years, the Soviets have emerged from a strategic situation which they evidently considered threatening to their security and damaging to their prestige.

3. The political situation has changed even more drastically over the past several years. Relations with China have deteriorated to the point that major hostilities could occur. It is clear that the Soviets now regard China as a major threat to the USSR, and they apparently see this threat as active, growing, and of long duration. The Soviet military buildup in the Sino-Soviet border area has primarily involved the theater forces, but there have been some related developments in the strategic forces. Substantial Soviet forces will almost certainly be stationed on the eastern frontier for the foreseeable future.

4. At the same time, the Soviets probably see no diminution of their military requirements in other areas. Indeed, in Europe, where Soviet troops still occupy Czechoslovakia, the requirement for theater forces has if anything grown. And although the danger of war with the US—in particular, of a US surprise attack—has in the Soviet view probably receded, the US remains the USSR's most formidable opponent. It constitutes the principal obstacle to the growth of Soviet influence in world affairs, and it alone has the military power to severely damage the USSR. In short, the Soviets only five years ago faced two major military problems: the strategic capabilities of the West and the security of Eastern Europe. Now there is a third, a hostile China with an emerging nuclear capability.

5. Under the present leadership, military expenditures have continued to rise, primarily as the result of the continuing development and deployment of stra-

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tegic forces, which account for about half of the total military expenditures. This increase plus increased allocations for the consumer are squeezing Moscow's ability to invest in the future growth of the economy. Now, events in the Far East and in Europe have posed new military requirements. Thus the perennial problem of resource allocation has sharpened, and promises to sharpen further.

6. Though economic considerations almost certainly were among the principal reasons for the Soviet expression of willingness to discuss arms control with the US, strategic considerations must have been equally compelling. In view of US plans for improvements to its strategic forces, the Soviets probably recognize that a large sustained effort would be necessary to maintain the relative position they have now achieved. They may also reason that relatively modest increases in their strategic forces would not significantly enhance Soviet security while large increases would trigger a US response. Moscow's willingness to discuss strategic arms control probably reflects the view that it has attained or is in the process of attaining an acceptable strategic relationship with the US. Moreover, Moscow may believe that even if an agreement could not be reached, negotiations would have the effect of damping down the arms race, perhaps for a considerable time.

Future Goals

7. In the absence of an arms control agreement, the Soviets will almost certainly continue to strengthen their strategic forces. As in the past, we have no direct evidence concerning Soviet goals for their intercontinental attack forces in the future. Furthermore, we doubt that the Soviets themselves have set precise goals for the next 10 years. In the past, their strategic programs have moved in waves rather than in a steady progression, and force goals have obviously been modified as the situation changed. The present size and composition of these forces, deployment programs now underway, and R&D activities all provide useful indications for the near term. But a consideration of the factors that will shape these forces over the longer term—Soviet policy objectives, US actions, economic constraints, technological capabilities—leads only to the most general conclusions as to the future course of Soviet policy.

8. The development of US strategic capabilities will probably be the most important single factor affecting Soviet decisions on force goals. The Soviets, for example, are surely concerned that projected improvements in US forces—Poseidon, Minuteman III, and ABM—will erode their relative strategic position, and they must be considering how best to counter them. Their decisions will in turn affect developments on the US side. We cannot predict with any accuracy the end result of this interaction between US and Soviet strategic programs over the next 10 years.

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9. The strategic forces built to date furnish some insight into Soviet strategic policy and objectives. The Soviet forces for intercontinental attack appear designed primarily for deterrence and, of course, for fighting a nuclear war if deterrence should fail. They have important damage-limiting capabilities, but most of the ICBMs and all of the submarine-launched ballistic missiles (SLBMs) are best suited for attacks on soft targets. The size of the forces for intercontinental attack, however, considerably exceeds that which the Soviets would probably think necessary to deter the US from deliberate attack.

10. Political and psychological factors must have weighed heavily in setting the force goals for current programs. An important objective of their strategic policy has been something that the Soviets could regard as rough parity with the US. We believe it will continue to be their minimum objective. This does not mean parity in each category of weapons; they are making no apparent effort, for example, to match the US in heavy bombers. We believe that in assessing the strategic balance the Soviets would go beyond numbers to consider qualitative differences in weapon systems and the interplay between offensive and defensive forces.

11. If forces on both sides could be maintained at something like present levels, such a policy might be attractive to the Soviets. It would be less costly than the strategic buildup of recent years, and could free resources for other pressing requirements. But, if the arms race should escalate sharply, maintenance of parity could prove very costly. Considering their other military problems, it is conceivable that in this situation the Soviets would settle for something less, i.e., a large assured destruction capability. For the foreseeable future, however, we believe that they would be prepared to continue the arms competition with the US.

12. We do not attempt to estimate how far the Soviets might carry a strategic buildup over the next 10 years. In evaluating future US strategic programs, they may conclude that a continuation of their efforts on the current scale will be essential merely to avoid retrogressing from their present relative position. But there are undoubtedly pressures in Moscow for a strategic policy aimed not merely at parity but at superiority over the US—it goes without saying that the marshals, and indeed the political leaders as well, would like to have a substantial edge. Should they aim at superiority, it seems reasonable to suppose that their programs might still be limited by a desire to stop short of forces that would provoke a US reaction. But they might either miscalculate or ignore the costs and risks involved in an indefinite continuation of competitive arms buildups. In any case, it seems likely that their programs will gradually cease to consist primarily of the deployment of additional launchers, and instead will emphasize developments such as MIRVs, and qualitative improve-

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ments such as survivability, capacity to penetrate defenses, and damage-limiting capabilities.^{6 7}

II. SOVIET FORCES FOR INTERCONTINENTAL ATTACK

A. General

13. The forces to be discussed in this section are ICBMs, nuclear-powered ballistic missile submarines, and heavy bombers. Development of these forces began in the 1950's. Deployment, however, was relatively limited until the mid-1960's when more effective and less expensive systems—new ICBMs and missile submarines—became available. Since that time, the buildup of these forces has proceeded rapidly.

B. ICBMs

Current Status

14. The SS-9 and the SS-11 constitute the backbone of the Soviet ICBM force. Although the SS-11 is deployed in far larger numbers, the SS-9 can carry a much heavier payload, and is more accurate. Both systems are emplaced in hardened single-silo launchers, the SS-11 in groups of 10 and the SS-9 in groups of six. The older SS-7s and SS-8s are deployed in soft launch positions or in hardened triple-silo sites. All of the above systems use liquid-propellants. The newest Soviet ICBM, the solid-propellant SS-13, is deployed in only a small number of silos at one of the 25 Soviet ICBM complexes.

15. Our estimate of the numbers of operational launchers in the Soviet ICBM force over the next two years appears in the following table. The spreads shown in

⁶ Mr. George C. Denney, Jr., Acting Director of Intelligence and Research, Department of State, considers that the general thrust of this paper permits a further statement on the future Soviet strategic buildup and that such a statement should be made. He believes that the Soviets would face great difficulties in any attempt to achieve strategic superiority of such an order as to significantly alter the strategic balance. In particular, he does not see how they would be able within the period of this estimate to achieve a capability to launch a surprise attack against the US with assurance that the USSR would not itself receive damage it would regard as unacceptable. For one thing, the cost of such an undertaking along with all their other military commitments would be enormous. More important, it would be extremely difficult if not impossible for them to develop and deploy the combination of offensive and defensive forces necessary to counter successfully the various elements of US strategic forces as they develop. Finally, even if such a project were economically and technically feasible the Soviets would face the prospect that the US would detect and match or overmatch their efforts.

⁷ Vice Adm. Noel Gayler, the Director, National Security Agency, and Maj. Gen. Jammie M. Philpott, the Assistant Chief of Staff, Intelligence, USAF, believe that it is more likely than not that the Soviets are seeking some measure of superiority. The massive Soviet R&D effort and the pace of their deployment support this view. Some visible superiority would provide the Soviets with advantage in political affairs and greater leverage in crisis confrontations. They do not, however, believe the Soviets are seeking the capability to limit any US attack to tolerable levels, as this capability is not feasible.

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**APPROVED FOR RELEASE
CIA HISTORICAL-REVIEW PROGRAM**

**SOVIET FORCES FOR
INTERCONTINENTAL ATTACK**

THE PROBLEM

To assess the strength and capabilities of Soviet forces for intercontinental attack, to estimate their size and composition through mid-1975, and to forecast general trends thereafter.

SUMMARY CONCLUSIONS

I. PRESENT STATUS OF SOVIET INTERCONTINENTAL ATTACK FORCES

General

A. The intercontinental attack forces considered in this paper include intercontinental ballistic missiles (ICBMs), submarine-launched ballistic missiles (SLBMs), and heavy bombers. In the course of the past 10 years the Soviets have engaged in a vigorous and costly buildup of these elements of their military establishment. While all defense spending increased during the period, the estimated share allocated to these forces doubled, going from about 5 percent in 1960 to more than 10 percent in the later years of the decade. The 1969 level—an estimated 2.3 billion rubles (the equivalent of \$5.6 billion)¹—was more than three times as high as the 1960 level. For the decade as a whole, spending on intercontinental attack forces accumulated to about 16

¹The dollar figures (appearing in parenthesis after the rubles) are approximations of what it would cost to purchase and operate the estimated Soviet programs in the US.

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billion rubles (about \$36 billion) with ICBMs accounting for about 80 percent of this amount. These figures do not include the cost of research and development (R&D), which rose faster during the 1960s than any other component of Soviet defense spending, and which we estimate has now surpassed that of the US.

B. As a result of this effort, the Soviets had on 1 October 1970 an estimated 1,291 operational ICBM launchers at operational ICBM complexes, and they will have an estimated 1,445 launchers operational by mid-1972. To this number may be added: (1) an estimated 80 SS-11 launchers (120 by mid-1972) believed to be deployed at intermediate-range ballistic missile (IRBM) and medium-range ballistic missile (MRBM) complexes and possibly intended for use against Eurasian targets, which are nevertheless capable of reaching the US, and (2) some 90 launchers which we believe are located at test or training sites. Of the 1,445 ICBMs estimated to be at operational complexes by mid-1972, 306 probably will be of the large SS-9 type and 850 the smaller SS-11. The remainder will consist of older SS-7 and SS-8 missiles, plus an estimated 80 of the small, solid-propellant SS-13s.

C. While these ICBM programs were under way, the Soviets were also energetically developing nuclear-powered, ballistic-missile-firing submarines. Of these the most notable is the Y-class, which, like the US Polaris, has 16 tubes for launching missiles. The missile presently carried by this class has an estimated range of about 1,300 n.m., a yield of [] and a system Circular Error Probable (CEP) of [] Y-class submarines are now being produced at the estimated rate of 7-8 a year; we believe that 14 are now operational and that some 5 others are in various stages of fitting out and sea trials. Another 12 or 13 are believed to be in various stages of assembly. Besides the Y-class there are submarines of earlier design which could contribute to the intercontinental attack mission.

D. The USSR has not, in recent years, shown equal interest in manned bombers of intercontinental capability. At present there are 195 heavy bombers and tankers operational, all of them of the Bison and Bear types, whose designs date from the 1950s. We believe that a prototype now exists of a new aircraft, [] It might be used in an intercontinental role, and the force may be built up beginning about 1974 or 1975.

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The Principal Types of ICBMs

E. The SS-11, by far the most numerous of Soviet ICBMs, is estimated to have a CEP of [] and a yield []. It is thus a weapon best suited for use against soft targets—cities, industrial installations, and some military targets. It can reach all parts of the US, but has also been tested to ranges as short as 500-600 n.m., indicating much flexibility in its possible uses. In 1969 testing began of a modified version. Analysis of these tests has not yet produced a full understanding of their implications; we remain confident nevertheless that the modified SS-11 will still be a soft-target weapon, designed to improve the ability to penetrate antiballistic missile defenses. Deployment of the SS-11 may have ceased at ICBM complexes, and appears to be tapering off at IRBM and MRBM complexes.

F. The SS-9 now exists in four variants: Mod 1, which carries a re-entry vehicle (RV) weighing about 9,500 pounds; Mod 2, whose RV weighs about 13,000 pounds; Mod 3, which has been tested both as a depressed trajectory ICBM (DICBM) and as a fractional orbit bombardment system (FOBS); and Mod 4, which carries three RVs. Leaving Mod 3 aside for the time being, our analysis of evidence on the capabilities of Mods 1, 2, and 4 turns up some perplexing problems.

G. There is general agreement that the SS-9 was developed, early in the 1960s, to provide better accuracy and a larger payload than the SS-7, presumably for use against hard targets—i.e., the US Minuteman system. The Mod 1 appears reasonably well adapted for this purpose. In 1965, however, the Soviets began to test the Mod 2, which with its heavier payload was estimated to have a yield of []. These tests were pursued with great vigor, and the Mod 2 was actually deployed before the Mod 1. []

[] But the Mod 2 has never in its numerous flight tests actually demonstrated enough range to reach any Minuteman complexes. We believe that its demonstrated range could be increased sufficiently to cover most or all of them (there are differences on this point) by using up more of the available propellant, removing telemetry packages, etc. Yet it remains curious that

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the Mod 2, alone among ICBMs except the SS-13, has never been tested to what we would presume to be its intended operational range.

H. The kill probability of a missile against hard targets is more sensitive to accuracy than to yield. The accuracy of the SS-9 cannot be ascertained from observations. It must be deduced [

] In the Intelligence Community, opinions as to the CEP of the SS-9 range from [

] Small as they may appear, the significance of these differences is considerable.² It is generally agreed that in actual operational employment, accuracies in the force as a whole would be somewhat poorer.

I. In sum, with respect to the capability of the Mod 2 against Minuteman, we have estimated that it can have sufficient range to reach most or all targets even though such range has not been demonstrated in tests. We see no reason to doubt that in the event of general war the Soviets would use it for whatever it could accomplish against the Minuteman system. But, the Soviets would have to deploy several times the present number of SS-9 Mod 1 and Mod 2, with their present capabilities, before achieving a force which would pose a serious threat to the Minuteman force as a whole. This brings us to a consideration of the Mod 4.

J. In August 1968, the Soviets began testing the SS-9 Mod 4, carrying three RVs. By April 1970, they had carried out 17 tests, about the usual number for a missile before it goes into operational deployment. In these tests, the three RVs [

] were not independently targetable, and the weapon as tested was not a multiple independently targetable re-entry vehicle (MIRV). [] we presume that the Mod 4 has not been operationally deployed, though it could be at any time.

² See paragraphs 52-54 for a discussion of the effect of differences in accuracy and yield.

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K. In October 1970, tests resumed, and by 5 November there had been four more. One of these was like the earlier tests; one was a failure. The two others exhibited [

]one practicable method of developing a MIRV, though it is a different method from that used by the US. Data are still scanty, and analysis far from complete. Should the Soviets decide to deploy a MIRV system based on these tests they could probably begin to do so in late 1971, using the present SS-9 guidance system. This guidance system would give each RV a CEP no better than that of the SS-9 with a single RV. The yield of each of the three RVs is estimated to be []The Mod 4 has sufficient range to reach Minuteman silos.

L. Returning now to the SS-9 Mod 3, as observed above it has been tested both as a DICBM and as a FOBS. In neither form does it have sufficient accuracy to attack hard targets effectively; its apparent function would be to attack soft strategic targets, avoiding early detection by the US Ballistic Missile Early Warning System. (New US warning systems give promise of reducing or eliminating this advantage.) There is some difference of opinion as to the capability of this vehicle operating as a FOBS. It is agreed, however, that the Mod 3 has been deployed only to a very limited extent, and that its future deployment will also be limited.

II. SOVIET POLICY AND FUTURE PROGRAMS

M. The broader reasons for the USSR's energetic buildup of intercontinental attack forces are neither complex nor obscure. In the early 1960s the Soviet leaders, politically and ideologically hostile to the US, and thinking and behaving as rulers of a great power, perceived that in this particular respect their military forces were conspicuously inferior to those of their most dangerous rival, the US. Consequently, they set themselves to rectify the imbalance—to achieve at a minimum a relation of rough parity. Parity in this sense cannot be objectively measured; it is essentially a state of mind. Such evidence as we have, much of it from the strategic arms limitation talks, indicates

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that the Soviet leaders think that they have now achieved this position, or are about to achieve it, at least in respect to weapons of intercontinental range.

N. Many aspects of the present force structure are also susceptible to simple and probably correct explanation. The Soviets built a large number of ICBMs in order to match—and now to surpass—the number of US ICBMs, and also to increase the probability that many would survive an initial US attack. They built missile-launching-submarines which are virtually invulnerable to attack when deployed, and they retained a manned bomber force as yet another option.³ The intercontinental attack force is obviously capable of being used in war, but there is no reason to believe that the Soviet leaders intend deliberately to make nuclear war. The force is an attribute of power, an instrument to support policy, a deterrent to the US.

O. Looking to the future, it seems clear that the Soviet leaders intend to maintain at a minimum such forces as will continue to give them—in their own phrase—a sense of “equal security” with the US. One method of doing so might be through an arms limitation agreement; they appear seriously interested in this possibility. We do not know whether an agreement will be reached, or on what terms. If it were indeed concluded, the development of Soviet intercontinental attack forces would be subject to its terms, but in this Estimate we confine ourselves mainly to a consideration of the situation in the absence of agreement.

P. With the general attitudes and policies of the USSR being what they are, it might seem obvious to infer that the Soviet leaders will strive to achieve marked superiority over the US in strategic weaponry. We do not doubt that they would like to attain such a position. The question is whether they consider it a feasible objective—whether they believe the chances of success good enough to justify allocation of the necessary resources, adjustment to the political implication of an all-out arms race, and acceptance of the risk that instead of sur-

³ Maj. Gen. Rocky Triantafellu, the Assistant Chief of Staff, Intelligence, USAF, does not believe Soviet missile-launching submarines are virtually invulnerable to attack. Based on the discussion of Soviet submarine patrol activity (paragraphs 127-132), only a few appear to be deployed at any one time; the remainder become vulnerable soft-targets in port. In view of extensive US efforts in ASW operations he further believes that some portion of the deployed subs would also be vulnerable and that vulnerability will increase as ASW technology improves.

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passing the US they might fall behind, especially in the technological competition. They might, in any case, think it feasible to seek a strategic posture that, while falling short of marked superiority, makes clear that the Soviets have advantages over the US in certain specific areas. For example, they can now claim an advantage in numbers of ICBM launchers. While this might not be significant militarily, it would help to dramatize the strategic power of the Soviet Union.

Q. But even if Soviet intentions go no further than maintenance of "equal security," their arms programs are bound to be vigorous and demanding. This is in part because Soviet leaders must have an eye not to what forces the US has at present, but to what it can have, or may have, in future years. In this respect they are likely to be cautious—to overestimate rather than underestimate the US threat. Moreover, the weapons competition nowadays is largely a technological race; each side is impelled to press forward its R&D lest it be left behind. Weapons programs also tend to attain a momentum of their own; the immense apparatus of organizations, installations, personnel, vested interests, and so on, tends to proceed in its endeavors unless checked by some decisive political authority.

R. On the other hand, there are constraints upon Soviet arms programs. The most obvious is economic; resources are not unbounded; the civilian economy demands its share; one weapon system competes with another for allocations; and intercontinental attack forces compete with strategic defense and general purpose forces. The various bureaucracies with interests in one or another area compete partly with rational argument and partly in sheer political infighting. Soviet leaders must also consider how far they may wish to press their own programs lest they provoke countervailing programs in the US. And they must assess not only the present and future US threat, but also that from China, and elsewhere.

S. While the foregoing considerations probably govern the nature of Soviet decisions as to future weapons programs, they provide us with little or no basis on which to estimate in detail what these programs will be. We have never had solid evidence on the problem, and there is no reason to expect that we shall have such evidence in the future. Moreover, in the present era the rapidity of technological advance tends to produce especially vigorous action and reaction be-

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tween military programs of the USSR and the US, and it has made the strategic relationship more susceptible to change than ever before.

T. Yet the possibilities are not unlimited, certainly in the next five years or so. For one thing, intercontinental weapons systems are of such complexity that their development, testing, and deployment take a long time. We can observe the testing phase, and thus project potential deployments. It usually takes about two years from the time we observe the first flight test of a new ICBM until that system becomes operational in the field. The interval for SLBMs is about the same or longer, and for bombers it is much longer. We can therefore estimate with much confidence that the *kinds* of weapons systems deployed by the Soviets during the next two years or so will be those already in operation or in the late stages of development. Even in the period from two to five years from now the force will be composed largely of existing kinds of delivery vehicles, though towards the end of the period some new ones may come into operational status, and some older ones be retired.

U. Because of the lead times involved in construction and deployment, we can also be highly confident of the *number* of launchers of intercontinental weapons which will be operational up to about two years from now. Beyond two years uncertainty increases as the time period of projection increases. Some reasonable limits to this uncertainty can nevertheless be derived from our knowledge of past deployment rates, especially those obtaining at a time when the Soviets appeared to be making a particularly vigorous effort.

V. But it is not in new types of weapon systems or in gross numbers of launchers that the most significant developments in Soviet forces for intercontinental attack will probably lie during the next several years. Rather it is in *qualitative improvements* to present systems, and of these the most important are in accuracy of missiles and multiple re-entry vehicles for them.

1. *Accuracy.* On technical grounds, we believe that the Soviets, without going to new guidance concepts but mainly by improving the components of the present guidance systems and changing the configuration of their RVs, could in two years achieve CEPs of about 0.25 n.m. for their ICBMs, and begin to introduce these improvements into the force. Hitherto, the Soviets have dem-

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onstrated no urgent disposition to achieve high accuracies. But they are likely to do so—at least for the SS-9—in the next few years, primarily because of the great increase in capability against hard targets which this development would afford them, and because, if for no other reason, the necessary technical developments are sure to occur in the normal course of product improvements.

2. *Multiple Independently Targetable Re-entry Vehicles.* We continue to expect the Soviets to develop MIRVs capable of attacking hard targets such as Minuteman. These could proceed from the current SS-9 Mod 4 program, or from a different concept such as that represented by the "bus" system used by the US. With the high order of accuracy desired in a hard target MIRV, we think that neither could be operational before late 1972 at the earliest. A MIRV with no more accuracy than the present SS-9 Mod 1 or Mod 2 could eventuate from the current Mod 4 program by late 1971.

3. *Land-Mobile ICBMs.* The Soviets will probably continue work on these, but it remains to be seen how extensively they may deploy them. There are many difficulties of maintenance, security, transportation, and the like which cause us to believe that the Soviets might have doubts about the practicability of such a system. In any event we would not expect it to become operational before 1975.

W. With respect to submarines, the Soviets will almost certainly continue to increase their Y-class fleet at the rate of about eight per year, for some time to come. Meanwhile, a new missile, the SS-NX-8, has been undergoing flight tests at a deliberate pace since June of 1969. Its range is indicated to be about 3,000 n.m., a substantial improvement over the missile presently carried by the Y-class. A puzzling aspect, however, is that the SS-NX-8 appears too large to be fitted into the Y-class. Moreover, we have no evidence of a new submarine class designed to carry this missile. We think it likely that, at a minimum, the SS-NX-8 will be deployed on 10 modified diesel-powered G-class units. Evidence is insufficient, however, for us to make a confident estimate as to the nature or extent of any further deployment. By about 1975 Soviet submarines could have missiles equipped with multiple warheads or penetration aids; the system CEP would probably be about 0.5 n.m. or worse.

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X. The fleet of intercontinental manned bombers will probably diminish in numbers gradually until at least 1975, when the new [] could begin to enter operational units. We believe that the [] is best suited for peripheral operations, but that it has some capability for intercontinental attack. All but the Air Force believe that our knowledge of this aircraft is still too limited to justify a confident judgment of its capabilities and future employment. The Air Force believes that the capabilities of [] as now assessed, indicate a Soviet intent to employ the aircraft in both intercontinental and peripheral operations.

* * * *

Y. The various uncertainties summarized above make it evident that no exact estimate of the future Soviet force structure, at least after about the end of 1972, could be defended. We have therefore constructed, in Section XII of this Estimate, several illustrative models to depict various possibilities. The first, called Force A, represents little more than a completion of programs presently under way; it seems highly unlikely that the Soviets would stop at this. Another model, Force D, is a sample of what we believe would be a maximum effort short of converting to a wartime basis; this also appears highly unlikely. Force C, without going as far as Force D, represents something the Soviets might undertake if they were to place top priority on the early acquisition of a capability to knock out virtually all of the US ICBM force; we also think this unlikely.⁴

Z. Between these outer limits of reasonable force structures we have set forth three others designated respectively B1, B2, and B3. These differ primarily in the rapidity with which the Soviets, either for technological or other reasons, deploy MIRVs, and they reflect also some differences in general force structure which would seem likely to obtain because of such differences in MIRV development. Our estimate is that Soviet intercontinental attack forces are most likely to fall somewhere in the area depicted by these B-models, but we wish to emphasize that these and the other models are strictly illustrative, and not to be regarded as confident estimates or as pro-

⁴ Maj. Gen. Rocky Triantafellu, the Assistant Chief of Staff, Intelligence, USAF, does not agree with the judgments in this paragraph. For his views, see his footnote to Section XII, page 61.

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jections for planning. As one moves beyond the next two years or so, all projections become increasingly uncertain; beyond five years they are highly speculative.⁵

⁵ Maj. Gen. Rocky Triantafellu, the Assistant Chief of Staff, Intelligence, USAF, does not agree with the judgments in this paragraph. For his views, see his footnote to Section XII, page 61.

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SOVIET FORCES FOR INTERCONTINENTAL ATTACK

THE PROBLEM

To assess the strength and capabilities of Soviet forces for intercontinental attack, to estimate their size and composition through mid-1976, and to forecast general trends thereafter.

SUMMARY AND CONCLUSIONS

I. PRESENT STATUS OF SOVIET INTERCONTINENTAL ATTACK FORCES

General

A. The intercontinental attack forces considered in this paper include intercontinental ballistic missiles (ICBMs), submarine-launched ballistic missiles (SLBMs), and heavy bombers. In the course of the past 10 years, the Soviets have engaged in a vigorous and costly buildup of these elements of their military establishment. As a result of this effort, the Soviets had operational on 1 October 1971 an estimated 1,375 launchers at regular ICBM complexes, 440 SLBM launchers, and 195 heavy bombers and tankers. To this may be added (1) 120 SS-11 launchers at Derazhnya and Pervomaysk which, though possibly intended for use against European targets, are nevertheless capable of reaching the US, and (2) 88 ICBM launchers at test or training sites. When all construction now under way on currently operational systems is completed by late 1973, the Soviets will have 1,407 launchers at regular ICBM complexes, including 288 of the large SS-9 type; about

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750 SLBMs, including about 650 on Y-class submarines; and 190 heavy bombers and tankers. During the past year, it appeared that the large-scale deployment programs of the 1960s had run their course and that no further deployment of existing ICBMs was planned. Construction of new types of silos which we believe to be underway, however, may indicate a new phase of deployment.

B. We believe that construction of two, possibly three, new types of silos is underway at the test center at Tyuratam and at some complexes in the field. The purpose of the new silos is not clear. They may be intended to house wholly new missiles, variants of present missiles, or existing types in a program aimed at increased survivability. Some may not be intended for missiles at all. We believe that at least one new missile system has been under development for some time and is probably nearing the flight test stage; it may be intended for one of the new types of silos. It would require about two years of testing to reach initial operational capability.

C. Production of the Soviets' 16-tube Y-class ballistic missile submarine has continued apace. We estimate that these submarines are now being built at the rate of about nine per year. There probably are now 23 operational, five or perhaps six in various stages of fitting-out and sea trials, and another 12 on the building ways. Besides the nuclear-powered Y-class, there are missile submarines of earlier design which could contribute to the intercontinental attack mission.

D. The USSR has not, in recent years, shown equal interest in manned bombers of intercontinental capability. No heavy bombers are currently in production, and the design of types now in service—the Bear and Bison—dates from the 1950s. Testing of a new strategic bomber—the Backfire []—is probably well under way, however, and the first units could be operational by late 1973 if equipped with existing weapons. All but the Air Force believe that this aircraft is best suited for use against Europe and Asia; the Air Force believes that it is suitable for both intercontinental and peripheral operations.

E. The Soviet system of command and control has been considerably improved over the past decade, and it is now flexible, reliable, and highly survivable. It permits Moscow to exercise highly cen-

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tralized control over the Soviet forces for intercontinental attack. Soviet writings have considered a number of circumstances under which the order to fire might be given; there is little evidence from these or other sources that the Soviets consider a bolt-from-the-blue first strike a workable strategy, or that they think a US first strike likely. In the event of war, the primary mission of the Soviet strategic attack forces would probably be the classic one of destroying the enemy's war making potential: ICBM launchers and launch control facilities, submarine and bomber bases, command posts, communications and power facilities, and industrial centers.

The Principal Types of Intercontinental Ballistic Missiles

F. The SS-11 Mod 1, by far the most numerous of Soviet ICBMs, is estimated to have a circular error probable (CEP) at intercontinental range of [] and a yield []

[] Thus it is a weapon best suited for use against soft targets—cities, industrial installations, and some military targets. It can reach all parts of the US, but has also been tested to ranges as short as 500-600 n.m., indicating much flexibility in its possible uses. In 1969, testing began on two versions of a modified SS-11 having greater throw weight and increased range. One, the Mod 2A, has a new re-entry vehicle (RV), a warhead probably yielding [] and what are probably one or more exoatmospheric penetration aids. The other, the Mod 2B, has three RVs which are not independently targetable. Each RV has a warhead with an estimated yield []

[] The SS-11 remains a soft target weapon; the two new versions are most likely intended to improve the system's ability to penetrate antiballistic missile defenses.

G. The SS-9 exists in four variants: Mod 1, which carries an RV weighing about 9,500 pounds; Mod 2, whose RV weighs about 13,500 pounds; Mod 3, which has been tested both as a depressed trajectory ICBM (DICBM) and as a fractional orbit bombardment system (FOBS); and Mod 4, which carries three RVs. Leaving Mod 3 aside for the time being, our analysis of evidence on the capabilities of Mods 1, 2, and 4 turns up some perplexing problems.

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H. There is general agreement that the SS-9 was developed, early in the 1960s, to provide better accuracy and a larger payload than the SS-7, presumably for use against hard targets—i.e., the US Minuteman system. The Mod 1 appears reasonably well adapted for this purpose. In 1965, however, the Soviets began to test the Mod 2, which, with its heavier payload, was estimated to have a yield [] These tests were pursued with great vigor, and the Mod 2 was actually deployed before the Mod 1. []

[] But the Mod 2 has never in its numerous flight tests actually demonstrated enough range to reach any Minuteman complexes. We believe that its demonstrated range could be increased sufficiently to cover all of them by using up more of the available propellant, removing telemetry packages, etc. Yet it remains curious that the Mod 2, alone among ICBMs except the SS-13, has never been tested to what we would presume to be its intended operational range.

I. The kill probability of a missile against hard targets is more sensitive to accuracy than to yield. The accuracy of the SS-9 cannot be ascertained from observations. It must be deduced []

[] In the Intelligence Community, opinions as to the CEP of the SS-9 range from a low of 0.4 n.m. to a high of 0.7 n.m. The significance of these differences is considerable.¹ It is generally agreed that in actual operational employment, accuracies in the force as a whole would be somewhat poorer.

J. In sum, with respect to the capability of the SS-9 Mod 2 against Minuteman, we have estimated that it can have sufficient range to reach all targets even though such range has not been demonstrated in tests.

¹ See paragraphs 32, 33, and 34 for a discussion of the effect of differences in accuracy and yield.

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We see no reason to doubt that in the event of general war the Soviets would use it for whatever it could accomplish against the Minuteman system. But, the Soviets would have to deploy several times the present number of SS-9 Mod 1s and Mod 2s, with their present capabilities, before achieving a force which would pose a serious threat to the Minuteman force as a whole. This brings us to a consideration of the Mod 4.

K. In August 1968, the Soviets began testing the SS-9 Mod 4, carrying three RVs. By April 1970, they had conducted 17 tests, about the usual number for a missile before it goes into operational deployment. In these tests, the three RVs [

] were not independently targetable, and the weapon as tested was not a multiple independently targetable re-entry vehicle (MIRV) [there was no evidence that the Mod 4 had been operationally deployed.

L. In October 1970, tests resumed, and by 5 November there had been four more. One of these was like the earlier tests; one was a failure. The two others exhibited [

] This led us to point out in NIE 11-8-70, "Soviet Forces for Intercontinental Attack", dated 24 November 1970, TOP SECRET, RESTRICTED DATA, that a system of the type implied by preliminary analysis of these tests could have the capability of attacking independently three separate targets, [

] In-depth analysis of the four latest tests has cast doubt on the preliminary judgment of last year that the Soviets appeared to be testing a MIRV. There are now divided views: some agencies believe that the Mod 4 is and will remain a soft target multiple re-entry vehicle (MRV); others believe that it could be either an MRV or an MIRV with limited targeting flexibility; still others think that it was intended to be an MIRV, but that development may have been discontinued.* No further tests of the Mod 4 have taken place since last fall.

* See paragraph 52 for a detailed presentation of the positions of the various agencies.

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[indications that the Mod 4 is being deployed [there are] All are agreed that if this is so, what is now being deployed is an MRV.]

M. Returning now to the SS-9 Mod 3, as observed above it has been tested both as a DICBM and as a FOBS. In neither form does it have sufficient accuracy to attack hard targets effectively; its apparent function would be to attack soft strategic targets, avoiding early detection by the US Ballistic Missile Early Warning System. (New US warning systems give promise of reducing or eliminating this advantage.) The Mod 3 appears to have limited capability as a FOBS. It is agreed that it has been deployed only to a very limited extent, and that its future deployment, if any, will also be limited.

II. SOVIET POLICY AND FUTURE PROGRAMS

N. The broader reasons for the USSR's energetic buildup of intercontinental attack forces are neither complex nor obscure. In the early 1960s the Soviet leaders, politically and ideologically hostile to the US, and thinking and behaving as rulers of a great power, perceived that in this particular respect their military forces were conspicuously inferior to those of their most dangerous rival, the US. Consequently, they set themselves to rectify the imbalance—to achieve at a minimum a relation of rough parity. Parity in this sense cannot be objectively measured; it is essentially a state of mind. Such evidence as we have, much of it from the Strategic Arms Limitation Talks (SALT), indicates that the Soviet leaders think that they have now generally achieved this position, or are about to achieve it.

O. Many aspects of the present force structure are also susceptible to simple and probably correct explanation. The Soviets built a large number of ICBMs in order to match—and now to surpass—the number of US ICBMs, and also to increase the probability that many would survive an initial US attack. They built missile-launching submarines which are highly survivable when deployed, and they retained a manned bomber force as yet another option. The intercontinental attack force is obviously capable of being used in war, but there is no reason to believe that the Soviet leaders intend deliberately to make nuclear war. The force is an attribute of power, an instrument to support policy, a deterrent to the US.

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P. Certain features of the Soviet system have affected the way in which decisions are made, and by whom. In the case of military policy and programs, decision-making is probably centered on two key elements—the military and military-industrial authorities who formulate new programs, and the top political leaders. The latter have the final say, but they must operate in a context of other forces and take them into account. Decision-making appears to involve clusters of advisory and executive bodies which are likely, at times, to be in competition with one another. Bureaucratic pressures, conflicts, and constraints may be heavy on occasion. We think it unlikely that observed Soviet programs are the product of a carefully thought out strategy or rationale which is undeviatingly executed. It is probably fair to say that the system is characterized by conservatism, both in making new proposals and in disposing of them.

Q. Looking to the future, we have little basis in evidence for estimating the content of specific decisions on strategic policy or particular weapon programs. It seems clear that the Soviet leaders intend to maintain at a minimum such forces as will continue to give them—in their own phrase—a sense of “equal security” with the US. One method of doing so might be through an arms limitation agreement; they appear seriously interested in this possibility. We do not know whether an agreement will be reached, or on what terms. If it were indeed concluded, the development of Soviet intercontinental attack forces would be subject to its terms. While we have given consideration in this Estimate to possible effects of a SALT agreement, we confine ourselves mainly to a consideration of the situation in the absence of agreement.

R. With the general attitudes and policies of the USSR being what they are, it might seem obvious to infer that the Soviet leaders will strive to achieve marked superiority over the US in strategic weaponry. We do not doubt that they would like to attain such a position. The question is whether they consider it a feasible objective—whether they believe the chances of success good enough to justify allocation of the necessary resources, adjustment to the political implications of an all-out arms race, and acceptance of the risk that instead of surpassing the US they might fall behind, especially in the technological competition. They might, in any case, think it feasible to seek a strategic posture that, while falling short of marked superiority, makes clear that the Soviets have advantages over the US in certain specific areas. For

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example, they can now claim an advantage in numbers of ICBM launchers. Whether or not such advantages are significant militarily, they help to dramatize the strategic power of the Soviet Union.

S. But even if Soviet intentions go no further than maintenance of "equal security", their arms programs are bound to be vigorous and demanding. This is in part because Soviet leaders must have an eye not to what forces the US has at present, but to what it can have, or may have, in future years. In this respect, they are likely to be cautious—to overestimate rather than underestimate the US threat. Moreover, the weapons competition nowadays is largely a technological race; the USSR is impelled to press forward its research and development lest it be left behind. Soviet weapon programs also tend to attain a momentum of their own; the immense apparatus of organizations, installations, personnel, vested interests, and so on, tends to proceed in its endeavors unless checked by some decisive political authority.

T. On the other hand, there are constraints upon Soviet arms programs. The most obvious is economic; resources are not unbounded; the civilian economy demands its share; one weapon system competes with another for allocations; and intercontinental attack forces compete with strategic defense and general purpose forces. The various bureaucracies with interests in one or another area compete partly with rational argument and partly in sheer political infighting. Soviet leaders must also consider how far they may wish to press their own programs lest they provoke countervailing programs in the US. And they must assess not only the present and future US threat, but also that from China, and elsewhere.

U. While the foregoing considerations probably govern the nature of Soviet decisions as to future weapon programs, they provide us with little or no basis on which to estimate in detail what these programs will be. We have never had solid evidence on the problem, and there is no reason to expect that we shall have such evidence in the future. Moreover, in the present era the rapidity of technological advance tends to produce especially vigorous action and reaction between military programs of the USSR and the US.

V. Yet the possibilities are not unlimited, certainly in the next five years or so. For one thing, intercontinental weapon systems are of such

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complexity that their development, testing, and deployment take a long time. We can observe the testing phase, and thus project potential deployments. It usually takes about two years from the time we observe the first flight test of a new ICBM until that system becomes operational in the field. The interval for SLBMs is about the same or longer, and for bombers it is much longer. We can therefore estimate with much confidence that the kinds of weapon systems deployed by the Soviets during the next two years or so will be those already in operation or in the late stages of development. Even in the period from two to five years from now the force will be composed largely of existing kinds of delivery vehicles, but it could change substantially by the end of the period of this Estimate.

W. Because of the lead times involved in construction and deployment, we can also be highly confident of the number of launchers of intercontinental weapons which will be operational for periods up to about two years from now. Thereafter uncertainty increases as the time period of projection increases. Some reasonable limits to this uncertainty can nevertheless be derived from our knowledge of past deployment rates, especially those obtaining at a time when the Soviets appeared to be making a particularly vigorous effort.

X. The most significant developments in Soviet forces for intercontinental attack during the next several years will probably lie in qualitative improvements to the ICBM force. The most important of these are likely to be in accuracy of missiles, in MIRVs for them, and in survivability.

1. *Accuracy.* There is still no direct evidence that the Soviets are taking the steps that would be required for them to improve significantly the accuracy of their ICBMs. Improvements sufficient to give system CEPs of about 0.25 n.m. could come about through normal advances in present technology, but an improvement to say 0.15 n.m. would require the Soviets to go to wholly new techniques of guidance. Whether they decide to do this will depend on their future targeting requirements and particularly on how much stress they place on improving capabilities to attack land-based ICBMs.

2. *Multiple Independently Targetable Re-entry Vehicles.* We continue to believe that the Soviets will develop MIRVs for their ICBMs. We expect a flight test program to start soon involving a new missile with MIRVs and with better hard target capabilities

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than the SS-9. About two years of testing would be required for this missile to achieve an initial operational capability. The Soviets probably could develop MIRVs based on the technology of the SS-9 Mod 4 with only one year of flight testing, but such MIRVs could not, in so short a time, be made more accurate than the present SS-9—that would require an improved guidance system and about two years of flight testing. Although there are differences of opinion on the future of the SS-9 Mod 4, all agree that it is unlikely to be developed as a hard target weapon if a new missile with hard target MIRVs is in fact to become available in the next two years or so.

3. *Survivability.* The USSR's concern about the survivability of its ICBM force is likely to increase, as the US deploys increasingly large numbers of independently targetable RVs. In addition to the employment of active defenses, survivability can be achieved through hardness and mobility. The new silos which are believed to be under construction will probably be harder than existing types. The Soviets may also pursue development of land-mobile ICBMs, but we believe this less likely than we did a year ago.

Y. With respect to ballistic missile submarines, the Soviets already have about 40 Y-class units in service or under construction, and may continue this program for some time. By the end of 1973 the Soviets will have as many launchers on Polaris-type submarines as the US; and these launchers will constitute a substantial portion of their forces for intercontinental attack. A new missile, the 3,000 n.m. range SS-NX-8, has been undergoing flight testing since June of 1969. Although this missile would be a substantial improvement over the 1,300 n.m. SS-N-6 now carried by the Y-class, the SS-NX-8 appears too large to be carried by Y-class submarines as they are currently configured, and we have yet to identify a new submarine class which might be designed to carry this missile. If the Soviets do in fact deploy a new submarine for the SS-NX-8, the first units probably could not reach operational status until about 1975, by which time the Soviets could have SLBMs equipped with penetration aids or multiple warheads, possibly including MIRVs. As an alternative to a new class of submarines, the Soviets might develop a new missile of extended range (at least 2,000 n.m.) for the present Y-class. If so, the first retrofitted Y-class unit probably could not be operational before late 1974, even if testing of a new missile began soon.

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Z. The present fleet of intercontinental manned bombers will probably remain about the same size or diminish only slightly up to the mid-1970's. In time, however, increasing numbers of aircraft in the current inventory are likely to be phased out. We believe that the Backfire is best suited for peripheral operations, but that it may have some capability for intercontinental attack. If so, it could be used to replace or augment existing elements of the intercontinental bomber force, provided a suitable tanker force were also developed. All but the Air Force, however, believe that our knowledge of this aircraft is still too limited to justify a confident judgment of its capabilities and future employment. The Air Force believes that the capabilities of the Backfire indicate a Soviet intent to employ the aircraft in both intercontinental and peripheral operations.

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AA. The various uncertainties summarized above make it evident that no exact estimate of the future Soviet force structure could be defended. We have therefore constructed, in Section X of this Estimate, several illustrative models to depict various possibilities. The first two, called SALT 1 and SALT 2, represent postures the Soviets might develop under the terms of a postulated SALT agreement. SALT 1 assumes that the primary Soviet objective would be the maintenance of a strong retaliatory capability. SALT 2 illustrates a maximum Soviet effort within the constraints of the postulated agreement and is designed to improve counterforce as well as retaliatory capabilities. We have constructed several other illustrative force models which consider possible Soviet courses without an arms limitation agreement. The first of these, Force 1, is illustrative of the results of a Soviet decision to stay with what they have plus the minimum improvement necessary to maintain what they might consider an adequate deterrent. It seems highly unlikely that the Soviets would be satisfied with such a force. Another model, Force 4, is a sample of what we believe would be a maximum effort short of converting to a wartime basis; this also appears highly unlikely. Force 3, without going as far as Force 4, represents something the Soviets might undertake if they were to place top priority on the early acquisition of a capability to knock out virtually all of the US ICBM force; we also think this unlikely.

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BB. Between these outer limits of reasonable force structures we have set forth three others, designated respectively 2A, 2B, and 2C. These differ primarily in the rapidity with which the Soviets, either for technological or other reasons, deploy MIRVs, and in the extent of deployment of new silos. They also reflect some differences in general force structure which would seem likely to obtain because of differences in MIRV development. Our estimate is that Soviet intercontinental attack forces are likely to fall somewhere in the area depicted by the "2" series of force models, but we wish to emphasize that these and the other models are strictly illustrative, and not to be regarded as confident estimates or as projections for planning. As one moves beyond the next two years or so, all projections become increasingly uncertain; beyond five years they are highly speculative.