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IPS by J. Hansen Date 7/1/03

Implications of Trends in Soviet Intercontinental Offensive Forces

4. Judging by developments under way or foreseeable in the near term, the early-to-mid-1980s will be a period in which Soviet intercontinental offensive capabilities are further improved relative to those of the West. Substantial increases in our estimates of Soviet countersilo capabilities and MIRV deployments over the next few years, combined with some slippages in US programs, lead us to believe that this period will arrive sooner and last longer than previously anticipated. Beginning around the mid-1980s, if Soviet

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programs proceed in accordance with our best estimates and US programs go forward without further slippages, US weapon systems becoming operational are likely to bring a new rise in US intercontinental offensive power along with continuing Soviet advances.

5. To assist in interpreting the implications of Soviet intercontinental offensive forces over the next 10 years, we compare them in the accompanying charts with projected US forces. The primary purpose of these comparisons is to display in graphic form some of the factors which may affect: the viability and stability of the US deterrent; the USSR's evaluation of its comparative intercontinental offensive capabilities and vulnerabilities; and perceptions of relative power in the United States, the USSR, and elsewhere.

- The future Soviet forces are intelligence projections, whereas the future US forces are based on Department of Defense projections. The projections assume adherence by both sides, through 1988, to the provisions of an agreement along the lines now being negotiated at the strategic arms limitation talks (SALT). The projections of Soviet forces represent our best estimates of Soviet deployments and technological progress under a SALT II agreement.
- The forces compared consist of ICBM launchers and their missiles, SLBM launchers and their missiles, and heavy bombers carrying bombs, SRAMs (short-range attack missiles), or ALCMs. The comparison of delivery vehicles includes all SALT-accountable systems except for about 200 B-52 aircraft that are in storage and not operational. Systems off line for overhaul or conversion are included in the number of delivery vehicles but are excluded from the comparisons of numbers of weapons and equivalent megatons.
- The comparisons also exclude a number of options each side could exercise to alter the striking power or survivability of its intercontinental forces. Options not illustrated on the US side, for example, include the deployment of ICBMs in a mobile basing configuration and the introduction of the M-X ICBM or a system with comparable capabilities.

Indexes of Soviet and US Forces for
Intercontinental Attack, 1958-83

Chart 1

Soviet Mod SAL Force; US SALT-Limited Force

(b)(1),(b)(3);42 USC §2168(a)(1)(C)-(FRD)



The figures for total delivery vehicles include ICBM launchers operational, in conversion, or under construction; SLBM launchers operational, under conversion, in shipyard overhaul, or on sea trials; and operational long-range bombers. The figures do not include SLBM launchers on SSBNs which have not yet begun sea trials or land-mobile ICBM launchers produced but not in units. Also excluded from the Soviet figures are Backfire aircraft, ICBM launchers believed to be operational at Tyuratam, Bear aircraft in naval aviation and reconnaissance units, Bison tankers, and the launchers aboard G-class submarines. FB-111s and mothballed B-52s are not included in US totals.

The figures for the online measures exclude ICBM silo launchers under construction or conversion and SLBM launchers on SSBNs undergoing sea trials, conversion, or shipyard overhaul.

Missile payloads composed of MRVs (which are not independently targetable) are counted as one RV.

The accuracy chart does not include the M-X or a comparable system.

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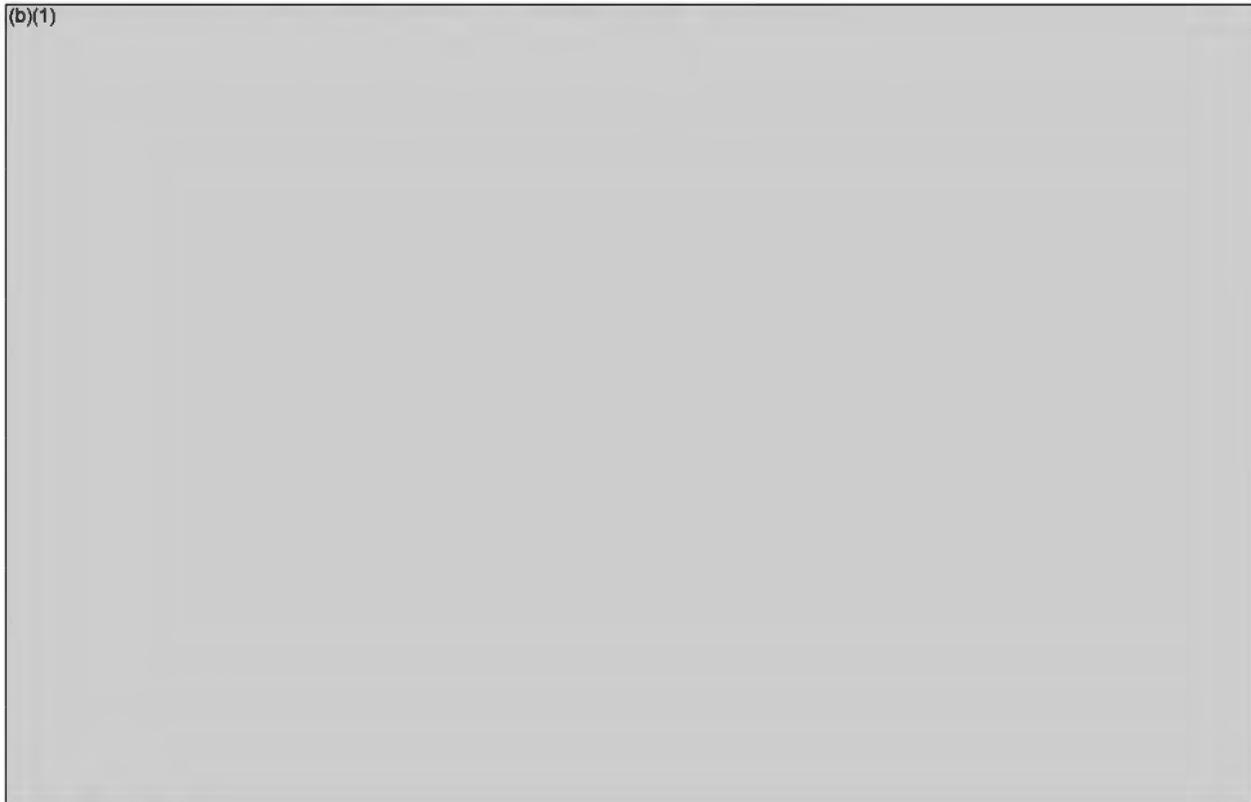
6. Chart 1 shows how Soviet and US intercontinental offensive forces compared in the past 10 years and is projected to compare in the coming 10 years, using four indexes of quantity and quality to illustrate the trends.

- The graphs show that, over the past decade, the Soviets have moved from a position of inferiority in each of these indexes to a present position in which they lead in delivery vehicles and online equivalent megatons, but are still inferior in total numbers of online weapons and average accuracy of MIRVed ICBMs.
- With respect to the future, the upper left-hand graph shows that SALT II would require a reduction in Soviet delivery vehicles and bring about a more nearly equal situation in this index.
- The lower left-hand graph shows that the substantial Soviet lead in online equivalent megatons will increase as the USSR continues to deploy weapons with relatively large yields.
- The lower right-hand graph illustrates the effects of the anticipated Soviet deployment of MIRVed ICBMs with improved accuracies. (The accuracies of individual Soviet ICBM systems are shown in figure 2 of part B.) The current US defense program does not include further accuracy improvements for present types of ICBMs.
- The upper right-hand graph, comparing total online weapons in intercontinental forces, shows how Soviet MIRV deployments, which began about five years later than those of the United States, are substantially increasing total Soviet weapons for intercontinental attack. In this index, the United States remains about at its current level until Trident and especially ALCM programs are under way. This Estimate is the first in which we have forecast even temporary Soviet equality in this index at any time during the ensuing 10 years under a SALT II agreement.
- The upper right-hand graph also shows that, in the middle and late 1980s, both sides are likely to advance in total numbers of online weapons in intercontinental forces. In the mid-1980s and after, the US advance is likely to be somewhat faster than that of the USSR because of the programmed large-scale US deployment of ALCMs.

Theoretical Destructive Potential of Soviet and US Forces for
Intercontinental Attack, 1953-88
Soviet Mod SAL Force; US SALT-Limited Force

Chart 2

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1. Chart 2 combines numbers of online weapons and the yields, accuracies, and reliabilities of weapons and their delivery vehicles into simplified measures of the total theoretical destructive potential of intercontinental striking forces. For purposes of measurement and comparison, we assume in each case that every online weapon in the intercontinental forces of both sides is to be used for one or the other of two generic applications: lethal area potential assumes exclusive use of all weapons to destroy soft area targets; hard-target potential assumes exclusive use to destroy hard point targets. For a common base of comparison, the damage criterion for soft targets is set at a level sufficient to destroy a reinforced concrete building, while for hard targets it is set at a level sufficient to destroy a representative hard missile silo.

- It should be noted that the graphs in chart 2 display rough measures of prelaunch potential against notional targets of purely nominal hardness. They do not reflect real-world economic or military target sets, targeting plans, or operational attributes of weapon systems which would affect their utility in intercontinental warfare.
- The left-hand graph shows that the USSR's program to deploy MIRV warheads of relatively high yield will cause its lead in lethal area potential to increase. The absolute potentials of both sides are very large, however.

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- The right-hand graph shows that the USSR's program to deploy MIRVed ICBMs with improved accuracies and relatively high yield warheads will cause Soviet hard-target potential to match and slightly surpass that of the United States beginning in about 1980. At that time each side will have the theoretical potential to destroy some 2,000 hard targets. These theoretical potentials will more than double by 1988. During this period, there will be many more hardened targets in the USSR than in the United States: in the USSR, some 1,400 to 1,600 hard ICBM silos and launch control centers plus hundreds of bunkers of varying lesser hardnesses; in the United States,

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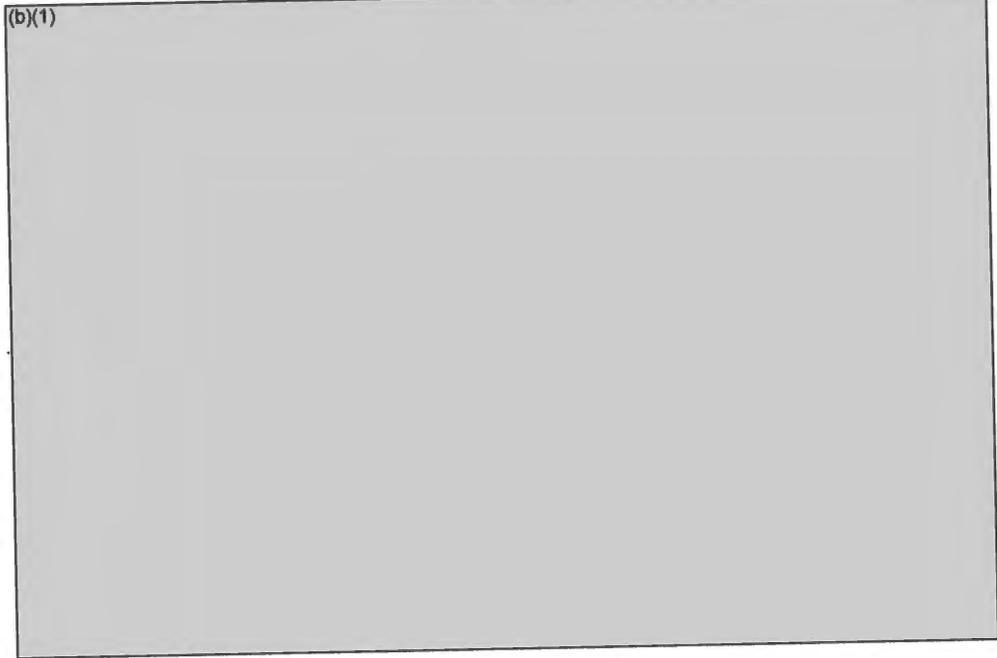
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... the countering capabilities of Soviet ICBMs, which make up that portion of the Soviet force best suited to a first strike against fast-reaction opposing forces. This consideration would be of particular importance to the Soviets' assessments of the capabilities of their intercontinental offensive forces, because their military doctrine stresses countermilitary targeting to contribute to damage-limiting objectives. The chart also illustrates the vulnerability of Soviet ICBM silos to a first strike by US ICBMs of programed types (that is, excluding M-X or a system with comparable hard-target capabilities). The Soviets' heavy dependence on silo-based ICBMs would make them especially mindful of the survivability of these weapons.

- The top two graphs show the increasing vulnerability of US Minuteman silos caused by Soviet deployment of accurate MIRVed ICBMs. For these calculations, we use a severe damage criterion, which we assume is the conceptual equivalent of what a prudent Soviet planner would use in evaluating his own capability.

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- With respect to the graphs on Soviet silo survivability, it should be noted that our estimates of Soviet silo hardness are subject to considerable uncertainty. Further, we have no basis for estimating total system hardness, which is the criterion the Soviets would use. The continued testing of silo hardness, and a current program to modify even their newest silos and launch control centers, indicate that the Soviets are still seeking to improve their ICBM system survivability.

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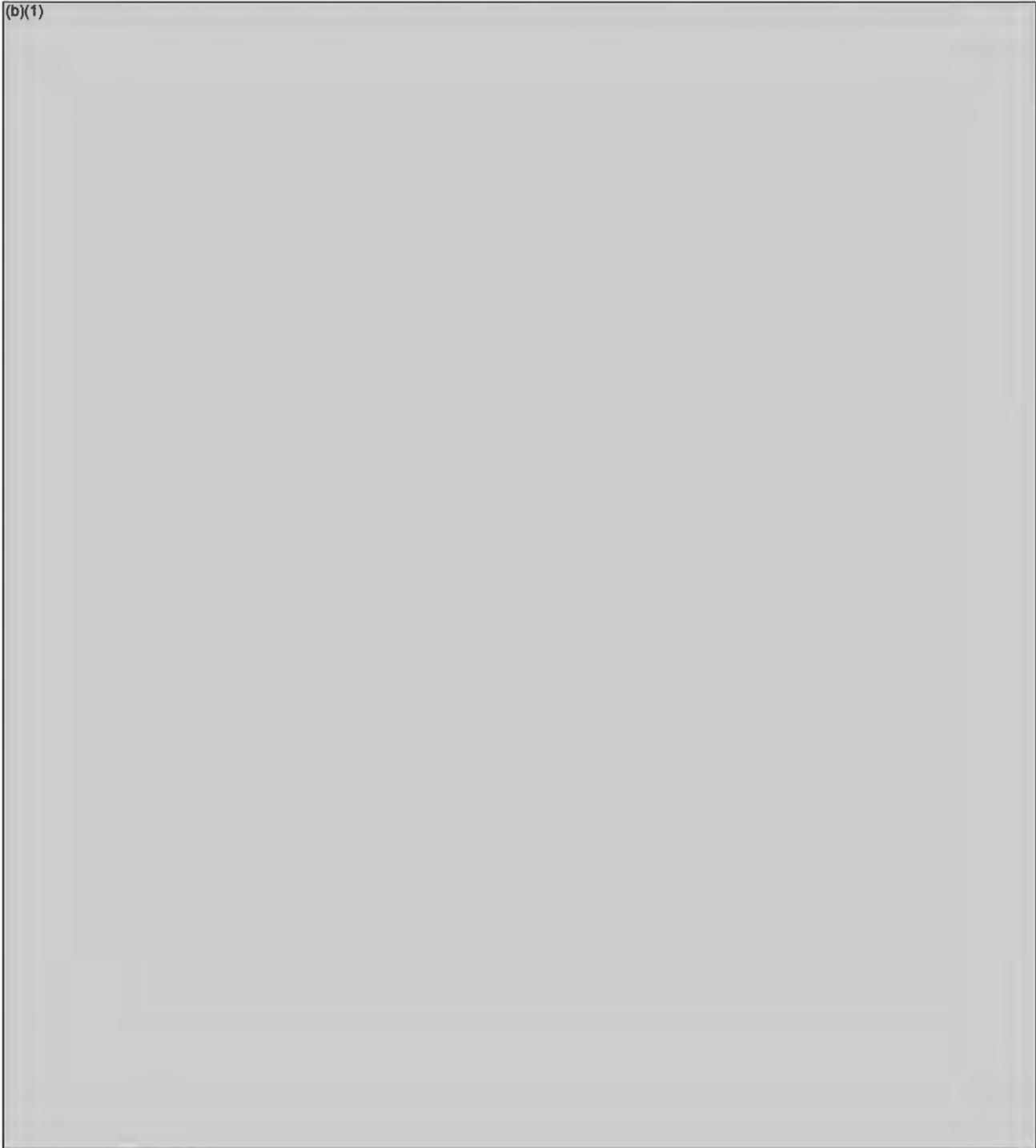
9. Charts 4 and 5 display trends in the destructive potential of intercontinental striking forces remaining after hypothetical counterforce attacks by the ICBMs of one side on the other. This is another simplified measure of some of the factors relevant to strategic capabilities, to perceptions about them, and to deterrence. (For a divergent view about the utility of this type of measure, see paragraph 13.) The calculations assume that the attacking side employs only ICBMs and strikes only at the retaliatory forces and bases of the other side. Clearly these are arbitrary limitations which neither side would likely follow in practice, although bombers and SLBMs are less useful than ICBMs for first-strike counterforce attacks against fast-reaction enemy forces. Using these assumptions, we make subtractions of two kinds from prelaunch potentials in order to show what we call residual forces.

- For the attacking side, residual forces are those ICBMs not used in the hypothetical counterforce attack plus all those SLBMs and bomber weapons that could be generated. Thus, for the attacker, the residuals are those forces available for other missions, either at the time of the first strike or later.
- For the side attacked, residual forces are those available for retaliation—that is, ICBMs calculated to survive hypothetical countersilo strikes plus bombers on alert and SLBMs at sea. The calculations assume that ICBMs ride out the attack without being launched from under attack, and assume that alerted bombers and at-sea SLBMs are not vulnerable to first strikes.
- Alternative first-strike conditions are examined: surprise attacks, in which the forces of the attacking side are in a generated posture but those of the side attacked are on day-to-day alert; and preemptive attacks, in which the forces of both sides are in a generated posture. The former is a worst case assumption for the side attacked. The latter corresponds conceptually to the conditions the Soviets believe most likely. Soviet military doctrine anticipates that intercontinental warfare would likely arise out of a crisis or theater conflict, although it does not rule out the possibility of surprise attacks.

10. Charts 4 and 5 show that Soviet residual potentials will tend to grow throughout the next 10 years, whereas those of the United States will remain fairly constant until about the mid-1980s and then increase. Noteworthy specifics are:

- In lethal area potential, shown in chart 4, the Soviet residual would far exceed that of the United States throughout the 1980s if the USSR struck first. The two sides would be about equal if the US struck first with surprise until about the mid-1980s, after

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with the Soviet residuals would be the larger. The Soviet residual potential would exceed that of the United States if the United States struck first preemptively.

- In hard-target potential, shown in chart 5, fairly steady increases in Soviet residuals would improve the USSR's relative position considerably in the early 1980s, after which US advances would tend to parallel continued Soviet gains if the USSR struck first and would exceed the Soviet gains if the United States struck first.

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- In absolute terms, however, the residual potentials of both sides are already substantial and will remain so. In all circumstances of attack, each side would have residual capabilities sufficient to inflict massive urban and industrial damage on the other. Even in the early 1980s,

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Soviet residual lethal area potential would grow from more than half the total US urban area today to about a third more than that area by the late 1980s. It should be noted that this analysis uses a very stringent damage criterion—sufficient to destroy a reinforced concrete building.

- Finally, a comparison of the surprise and preemptive attack cases displayed in charts 4 and 5 shows—as would be expected—that both the relative and absolute residual potentials of the side attacked would be improved in the preemptive cases because in these cases we assume that its forces had been alerted prior to the attack.

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11. Chart 6 illustrates the marked and growing asymmetries in the composition of Soviet and US intercontinental offensive forces, using residual potentials after hypothetical surprise attacks as the example.

- The left-hand graphs display the continuing heavy Soviet dependence on silo-based ICBMs. Soviet SLBM RVs, while increasing in numbers, add very little to residual lethal area and hard-target potentials because of their relatively low yields and poor accuracies. In this calculation, bombers make no contribution to Soviet residual potentials because the USSR keeps no bombers on alert—hence, we assume that none would survive a

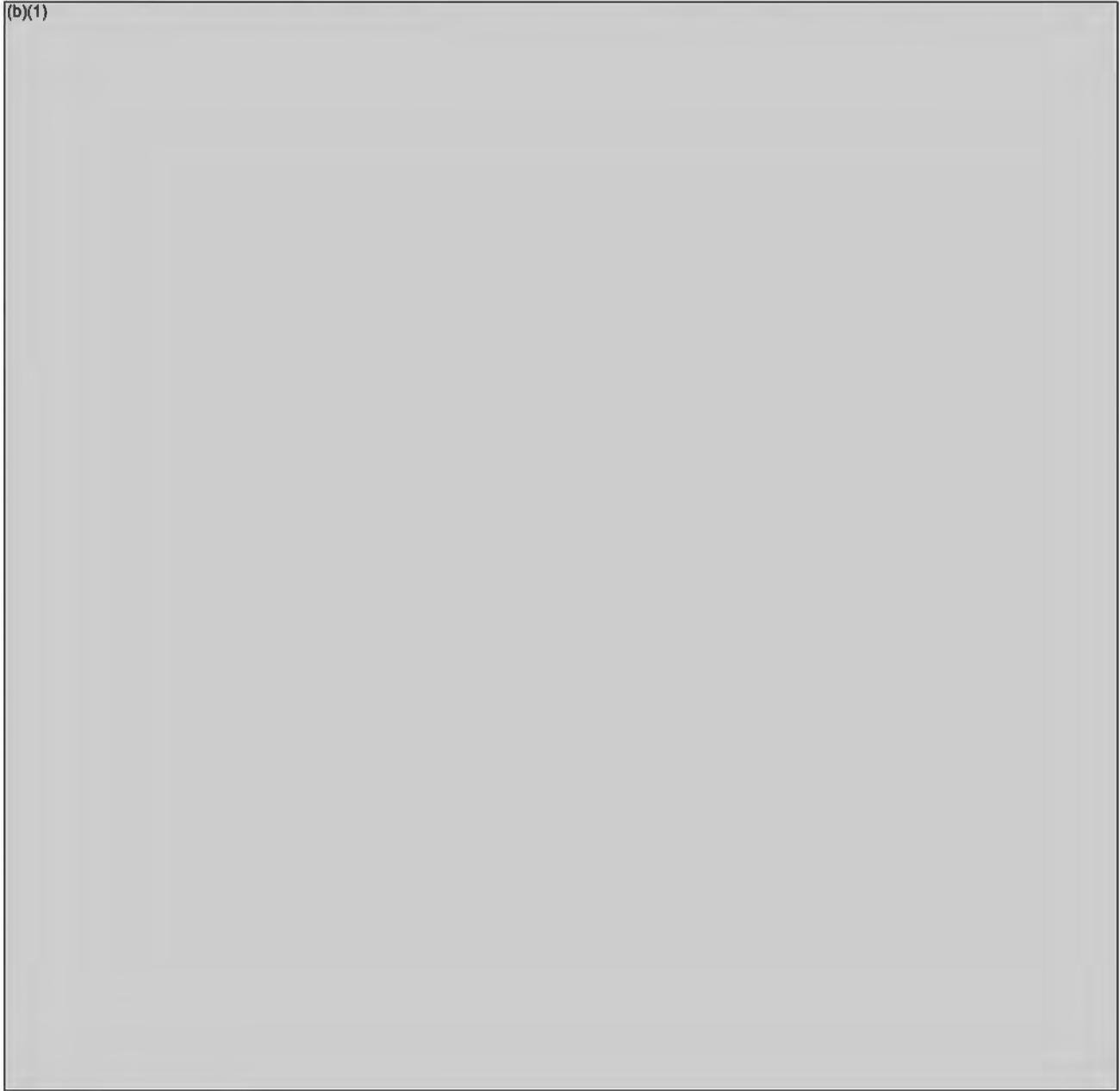
**Composition of Soviet and US Residual Potentials
Following Surprise Attack, 1973-83**

Chart 6

**By ICBMs of US SALT-Limited Force
Against Soviet Mod SAL Force**

**By ICBMs of Soviet Mod SAL Force
Against US SALT-Limited Force**

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US surprise attack. Because virtually all of the USSR's residual potential would be in ICBMs having short flight times, strikes against the United States by Soviet residual forces could arrive promptly.

- The right-hand graphs illustrate that the US force mix is more balanced at present, but that silo-based ICBMs would be reduced to only a negligible fraction of residual potentials in the future. The projected increases in the US residual potentials in the middle and late 1980s are caused by US deployment of Trident SSBNs and especially ALCMs.
- Increasing US dependence on aerodynamic vehicles (bombs, SRAMs, and ALCMs) is illustrated by their growth as a proportion of US residual potentials.

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12. The results displayed in this Estimate are not to be taken as indicators of the results which might occur in war. Clearly, just the technique of allocating all residual forces against either hard or soft targets of nominal hardness before comparing them fundamentally divorces these analyses from the world of reality. Instead, the technique is intended only to display the general characteristics and qualities of the forces in comparable terms, and to illustrate trends in the two forces over the period of the next decade. Specifically, the calculations seek to:

- Compare gross capabilities against hard or soft targets in comparable situations in order to display whether one force or the other has more of an accent toward hard or soft target capability.
- Compare the relative capabilities of the two forces to absorb a first strike, by displaying how much retaliatory potential would survive on the side attacked (a factor which a side contemplating a first strike would have to consider along with its own remaining potential).
- Display the relative reliance of each weapons mix upon one type of weapon or another.