

23478

MEMORANDUM

NATIONAL SECURITY COUNCIL

INFORMATION

November 13, 1970

~~TOP SECRET/RUFF/ZARF/UMBRA~~

MEMORANDUM FOR DR. KISSINGER

FROM: K. Wayne Smith *KWS*

SUBJECT: SS-9 Tests

Richard Helms has sent you a memorandum which summarizes the recent series of SS-9 tests. (See Tab A)

The memorandum covers the same material I covered in my memorandum of November 4 (see Tab B)

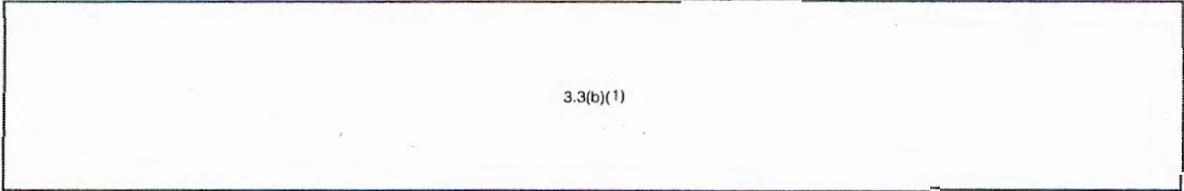
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Attached to the memorandum are extracts of NIEs for 1968/9

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Authority NLN 00-36, #27 - Appeal  
NARA PMH Date 8/14/2015



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MEMORANDUM FOR: Dr. Henry A. Kissinger

Here is the paper requested on your behalf last evening.

Also attached are the relevant portions of the National Intelligence Estimates for 1968 and 1969 on this subject.

*Rich*  
Richard Helms

Attachments - 3

Memo: Recent Tests of the Soviet SS-9.  
TCS 582-68, pages 2, 12, and 13.  
TCS 1057-69, pages 3, 4, 13, 14, 15, 16, 17, 18, and 19.

10 November 1970  
(DATE)

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FORM NO. 101 REPLACES FORM 10-107 WHICH MAY BE USED.  
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Authority NLN 00-36 #27 - Appeal  
NARA PMH Date 8/14/2015

10 November 1970

MEMORANDUM

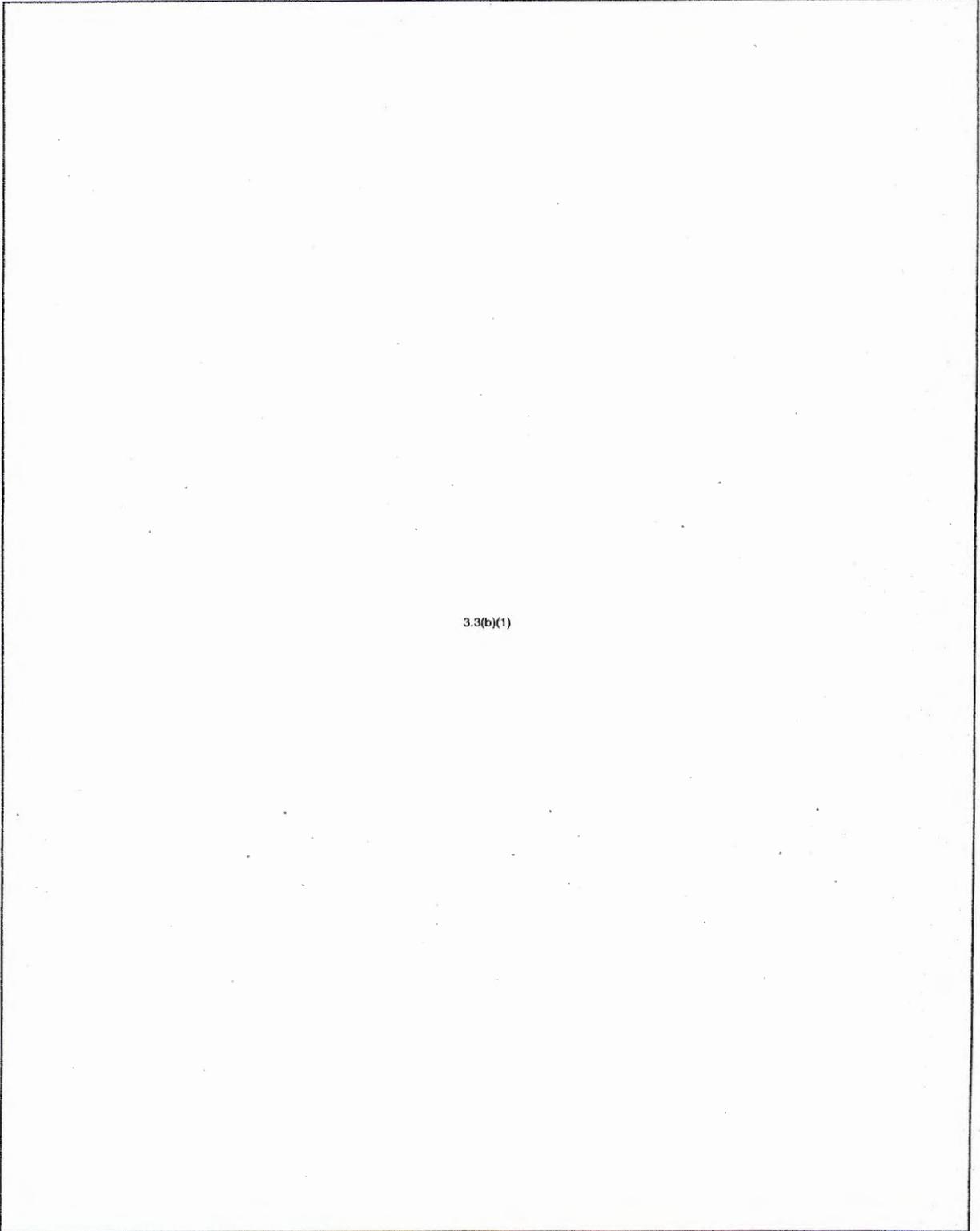
SUBJECT: Recent Tests of the Soviet SS-9

In mid 1968 the Soviets began testing a multiple re-entry vehicle version of their largest ICBM, the SS-9. We have referred to that system as the SS-9 Mod 4. The program consisted of flight tests over their normal test range within the Soviet Union and to longer ranges in the Pacific Ocean. As of April 1970, there had been seventeen tests of the system--a number which usually represents a complete Soviet R&D test program.

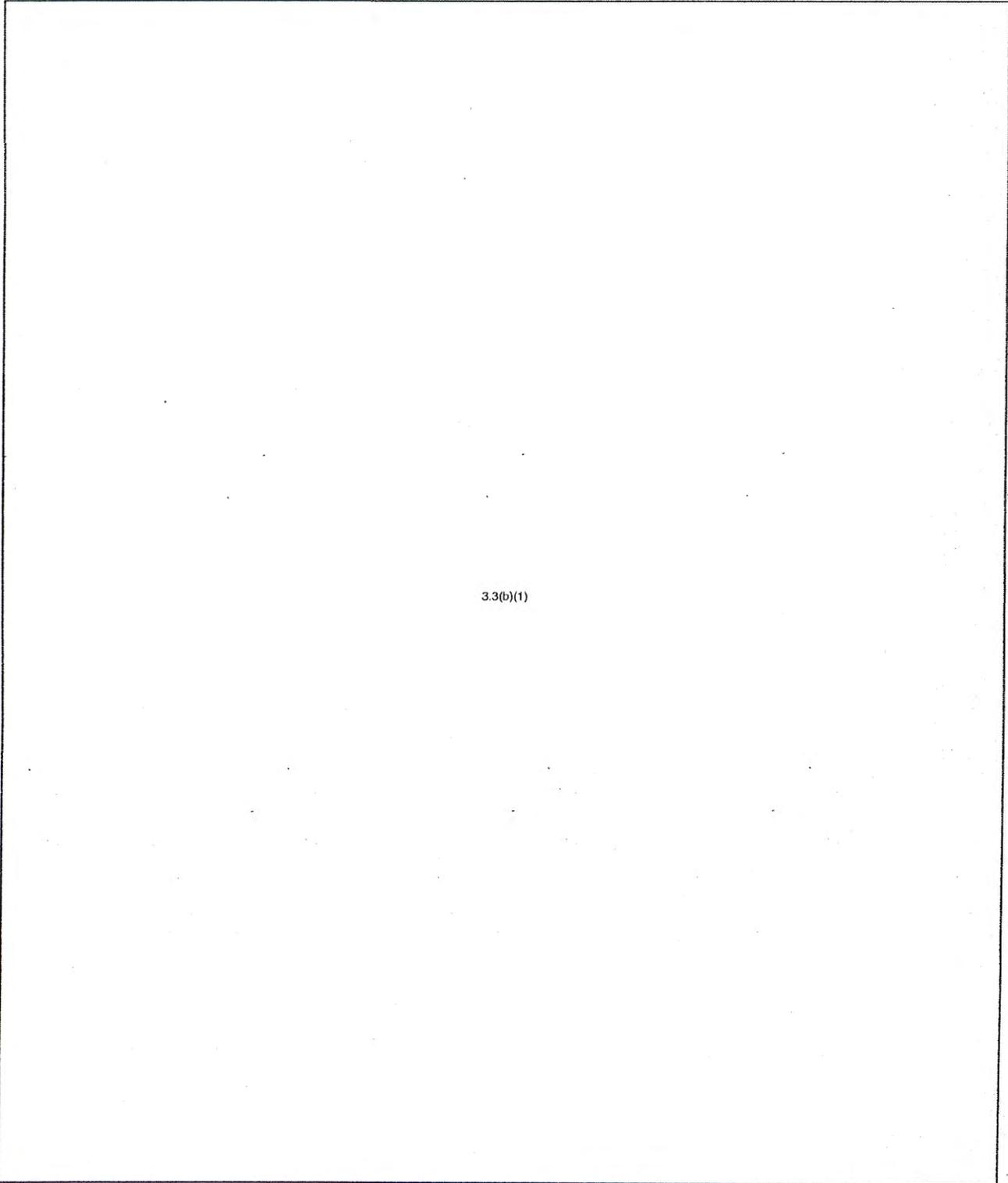
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qualitative improvements, particularly those designed to enhance survivability and capacity to penetrate defenses.

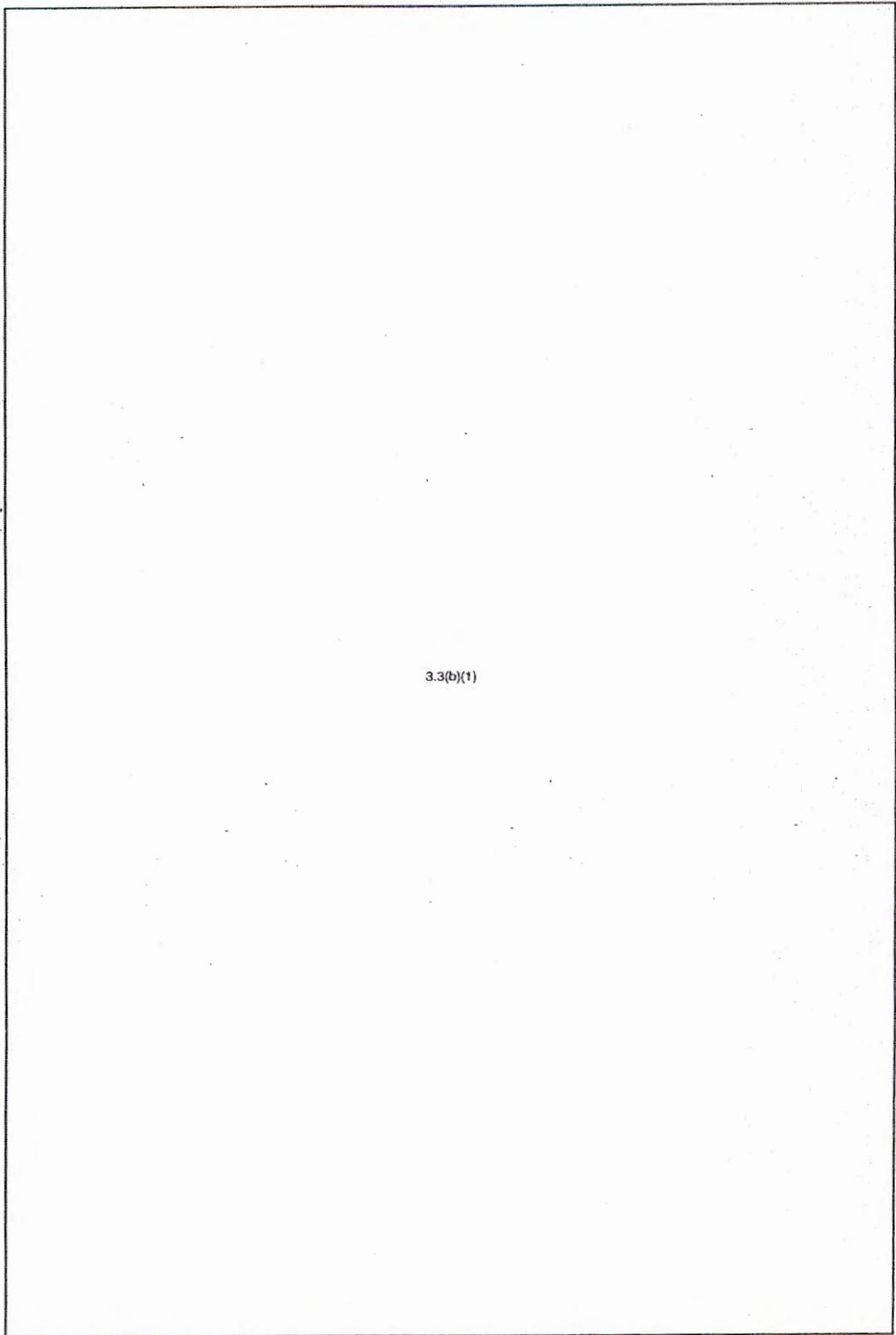
C. *Intercontinental Ballistic Missiles (ICBMs)*. The great improvement in the USSR's strategic position results primarily from the rapid and extensive ICBM deployment of the past few years. The Soviet ICBM force now has about 900 operational launchers and our evidence on construction activity indicates 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.<sup>1</sup> 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 intercontinental ballistic missile, 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.

<sup>1</sup> 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, Intelligence, Department of the Army, see their footnote to paragraph 33.

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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.<sup>1</sup>

#### *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 MIRVs<sup>2</sup> 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 30 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

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

<sup>2</sup> 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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TCS 1057-69

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.<sup>3</sup>

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.

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<sup>3</sup>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. Harlfinger, 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 46.

probably require a year or two more. We believe the Soviets would test these aids to ICBM range, and that we could identify them a year or two before IOC.

24. Some refinement in the CEP of ICBMs could be achieved by further improvements to guidance systems alone (perhaps down to 0.4 n.m. for the SS-9).<sup>12</sup> However, to achieve very high accuracy (on the order of 0.25 n.m.) the Soviets would need new guidance systems and new RVs; we do not believe they could make these improvements before 1972. We are confident that we would detect and identify their efforts to improve accuracy during flight tests, although we probably could not determine the precise accuracy achieved.

25. [redacted] recent SS-11 firings suggests that the Soviets are either modifying this missile or developing a variant of it.

[redacted] Further data must be collected and analyzed before we can better understand what is involved.

26. A most important Soviet development is already under way—the development of multiple re-entry vehicles. These RVs may be either individually targeted (MIRV) or not (MRV). Assuming no arms limitation agreement to the contrary, we believe that within the next few years the Soviets will deploy MIRVs. The evidence at present does not permit a confident estimate of the characteristics and capabilities of the systems which might be deployed, and especially of whether they may have a capability against widely-separated targets, or only against those which are fairly close together. In the following paragraphs the evidence is discussed, and various options open to the Soviets are set forth.

27. Since 23 August 1968, the Soviets have conducted seven tests of the SS-9 with a heavy payload containing three separate RVs; the latest test was on 22 May this year. We believe that each RV weighed about 4,000 pounds and could carry a warhead

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|           | 6.2(a) | 3.3(b)(1) |
| 3.3(b)(1) |        |           |

[redacted] In all seven tests the RVs followed simple ballistic trajectories, that is, they were not independently guided after separation from the carrier.

28. These tests have demonstrated a simple MRV, and it may be that this is all that they were intended to achieve. When this line of development was initiated, which must have been several years ago, the Soviets were aware of

<sup>12</sup> For the views of 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. Halfinger, 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 footnote to paragraph 19.

the US development of MRVs for the Polaris system and of the Nike-Zeus ABM system. A simple MRV would have been an effective answer to the Nike-Zeus, which had a small warhead and depended on the physical destruction of its RV target. As time went on, the Soviets probably gained a general understanding of the planned Sentinel ABM system, but may not have understood the Spartan missile's different method of kill [redacted] 6.2(a)

[redacted] 6.2(a) If they did understand the Spartan's kill capability, they may have decided to go ahead with the system under development and try to improve its capability for penetration by hardening the warheads.

29. As tested to date, this MRV system would confront the Sprint element of the US ABM system with three separate targets. It seems unlikely that the RVs can be sufficiently hardened to present the Spartan with the same problem, but in any case the defenders would have to judge whether any incoming objects that survived had been neutralized. Except as a possible counter to ABM, however, the system as demonstrated does not improve Soviet capabilities to attack individual targets. In general, an ICBM so equipped would be no more effective against a soft target than one with a single large payload, and it would be less effective against a single hard target. A simple MRV system of this type could reach IOC late this year.

30. An alternative system can be postulated and related to the current Soviet test program—one with sufficient flexibility so that variations in the dispersal pattern of the RVs would allow each to be targeted against closely spaced individual targets, i.e., Minuteman silos. In considering this possibility the following points are pertinent:

- a. Evidence [redacted] 3.3(b)(1) suggests that the mechanism within the ICBM itself is more sophisticated than necessary if this development were only to achieve a simple MRV. In this hypothesized system, variations in the size and shape of the impact pattern could be achieved [redacted] 3.3(b)(1)

[redacted] 3.3(b)(1)

[redacted] 3.3(b)(1) to create the variety of patterns needed to target any substantial portion of the Minuteman force, i.e., so that each individual RV would impact within the required distance of the particular Minuteman silo which was its target.

- b. The orientation of the impact pattern must also be capable of change to achieve independent targeting. To do this the payload must be oriented properly either before launch or during powered flight, prior to release of the RVs. [redacted] 3.3(b)(1)

[redacted] 3.3(b)(1)

3.3(b)(1)

c. We believe that the Soviets would want to test a capability to vary the size, shape, and orientation of the impact pattern, and that we will detect such testing if it occurs. The question then arises: were the very slight variations in performance 3.3(b)(1) intentional and part of the tests, or were they random, 3.3(b)(1)

3.3(b)(1) On this point opinions differ. If the variations were intentional, this would indicate that the test series was indeed pointing toward development of the independently targeted system we have hypothesized in this paragraph; if they were not intentional, the system would best be interpreted as a simple MRV.

31. If the Soviets are in fact aiming for the system postulated in the preceding paragraph, it could reach IOC in late 1970 at the earliest. Further testing would certainly be required to develop the flexibility in spread and dispersal pattern needed for such a system, and we probably would be able to identify such testing if it occurred. At present, however, we cannot estimate with confidence whether the Soviets are developing a system of this type or a simple MRV.<sup>13</sup>

32. If this program is directed only toward a simple MRV, it probably will be followed by development of a MIRV system capable of attacking hard targets. This follow-on system might be a highly accurate one carrying a larger number of warheads or a somewhat less accurate system which would have a small number of larger warheads. Neither system would be likely to reach IOC before 1972.

33. Although the system described in paragraph 30 would have the advantage of three independently targeted warheads, it would have no better accuracy than the SS-9 and its reliability would be somewhat less. If it is deployed, we believe that the Soviets would try to improve its performance significantly. They might

<sup>13</sup> Rear Adm. Daniel E. Bergin, for the Acting Director, Defense Intelligence Agency; Rear Adm. Frederick J. Harlfinger, 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, believe that although there are still unresolved technical issues, the system postulated in paragraph 30 offers the more plausible explanation of the nature of the weapon system under test because of the following:

- a. The SS-9 missile is the high-accuracy ICBM system of the Soviet Union;
- b. In the observed flight tests a clear attempt has been made to minimize the degradation to the CEP 3.3(b)(1)
- c. The use of multiple warheads independently targeted would multiply the effective number of boosters, while the limitation to only three RVs still provides sufficiently great yield in each RV to be effective against hard targets;
- d. The footprint size is comparable with the silo spacing in the Minuteman fields, although the specific variations required have not been demonstrated.

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still follow it with a new system of the kind described in the previous paragraph. If so, the new system would probably not reach IOC before the mid-1970's.

34. As to new ICBMs, the only detected flight tests which could relate to one are the firings [3.3(b)(1)]. The Soviets tested five of these missiles from Plesetsk between February 1968 and September 1968; two flew 2,900 n.m. to the Kamchatka Peninsula and three failed. After this rather poor performance, no more were tested until this summer, when the missile was successfully flown three times to Kamchatka. The first stage propellant is unknown, but the second stage clearly employs liquid propellants. There is apparently enough propellant in the second stage to fly the missile on the order of 4,000 n.m. With that range, the system could not reach the US from present ICBM deployment complexes, thus it is possible that it will have an IRBM role. But until more evidence becomes available on the first stage, we cannot make a valid estimate of the maximum range of the system.

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[3.3(b)(1)]

36. When NIE 11-8-68<sup>14</sup> was published last fall, the Soviets were working on a new launch group at Tyuratam apparently intended for a large, liquid-propellant ICBM about the size of the SS-9 or somewhat larger. We then estimated that the Soviets were developing a new ICBM as a follow-on to the SS-9, which could be ready for deployment in the 1970-1972 period. We estimated that it could have a CEP [6.2(a)] by 1972 and carry a warhead [6.2(a)] we considered it the best candidate to carry a sophisticated re-entry system. [3.3(b)(1)]

[3.3(b)(1)]

<sup>14</sup> See NIE 11-8-68, "Soviet Strategic Attack Forces," dated 3 October 1968, ALL SOURCE, RESTRICTED DATA.

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43. Our evidence provides little basis for a confident estimate of Soviet ICBM force levels beyond the next few years. It is almost certain that the Soviets themselves have not fixed on definite goals for their strategic forces for the period of this estimate, and even their intermediate goals may be altered by events. Their decisions will, of course, be heavily influenced by developments on the US side—notably ABM and MIRV deployment—and they will involve not only ICBMs but the whole mix of strategic offensive and defensive forces. The number of launchers will probably become less significant in Soviet calculations than the numbers and kinds of re-entry vehicles. Their decisions as to numbers of ICBM launchers will be affected by the nature and extent of qualitative improvements to their own force.

44.

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As we have noted above, when all identified launchers under construction are completed and all groups filled out, the Soviets will have some 1,360 operational ICBM launchers. There will probably be some additional SS-9 and SS-11 deployment, but these programs have now been underway for about five years, and may not continue beyond the next year or so. Moreover, the Soviets will probably deactivate most or all of the 220 older launchers during the period of this estimate. Allowing for the phase out of these older launchers and some additional SS-9 and SS-11 deployment, a force of some 1,300 launchers appears to be a minimum.

45. It is possible that the Soviets will stabilize the ICBM force near this level. If they are seeking rough strategic parity, they might consider that by building an ICBM force somewhat larger than that of the US they compensate for their inferiority in manned bombers and (for the next several years at least) in ballistic missile submarines. Or they might reason that a force of this size, together with developments in their other forces, would provide some margin of advantage

over the US, without being so large as to set off another wave of US deployment. In either case they would continue to make qualitative improvements in the force which would probably include MIRVs, and perhaps the retrofit of new systems into existing launchers.

46. There are several factors, however, that could push the number of ICBM launchers well beyond this level. Concern for survivability of the force could lead to additional deployment of ICBMs both in dispersed silos and in mobile launchers. Either a Soviet decision not to deploy MIRVs or a substantial delay in MIRV development could also lead to much larger numbers. And finally a Soviet attempt to achieve a substantial strategic advantage or even the sheer momentum of military programs could have the same effect. Thus, the ICBM force could grow by some hundreds of launchers; we cannot now estimate the maximum size it might reach.<sup>15 16 17</sup>

47. Unless there is a change in the deployment patterns observed thus far, the force will be composed primarily of small ICBMs suitable chiefly for attacks

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<sup>15</sup> Projections of Soviet strategic forces will be made in forthcoming National Intelligence Projections for Planning (NIPP-70).

<sup>16</sup> Mr. George C. Denney, Jr., Acting Director of Intelligence and Research, Department of State, acknowledges the serious difficulties in estimating an upper limit for Soviet ICBM deployment but considers it essential that the intelligence community address the question. Thus, he disagrees only with the statement that we cannot now estimate the maximum size which the Soviet ICBM force might reach. He believes that the most important factors in determining the extent of the Soviet build-up of ICBMs will be how they regard on-going strategic programs of the US and the extent to which both countries turn to new types of weapons, especially ABMs and MIRVs. The Soviets will of course attempt to arrive at a combination of their own strategic forces which will appear most advantageous to them in the light of these and many other considerations—economic, political, and psychological. Considering all these factors, he believes that a projection of 1,800 ICBMs represents a reasonable estimate of the upper limit that the Soviets might reach within the period of this estimate with a sustained effort which included a MIRV program and a follow-on ICBM. This is not an estimate of Soviet capabilities but a judgment of the upper end of the range within which the Soviet ICBM force is likely to fall.

<sup>17</sup> 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 I. Harlfinger, 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, recognize the uncertainties in making long-term estimates of Soviet ICBM goals, but do not believe they are any greater than those relating to long-term estimates of other strategic systems. They consider it essential to estimate the most probable Soviet ICBM force levels. They believe that the most likely Soviet force goal during the period of this estimate will be between 1,500 and 1,800 launchers. The actual number within this range will depend on the number of MIRVs which are deployed.

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MEMORANDUM

NATIONAL SECURITY COUNCIL

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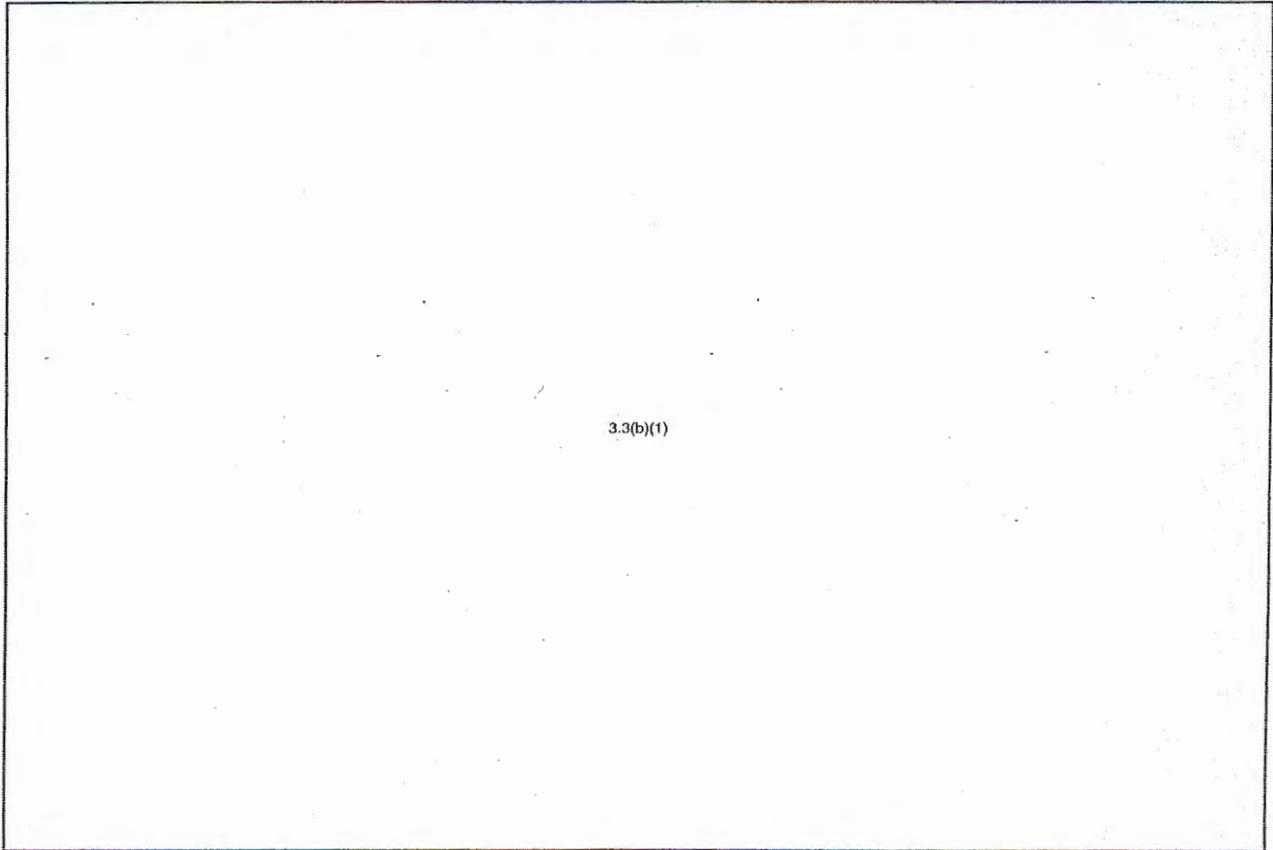
INFORMATION  
November 4, 1970

MEMORANDUM FOR DR. KISSINGER

FROM: K. Wayne Smith *KWS*

SUBJECT: SS-9 Tests

You asked for some information on the recent SS-9 tests.



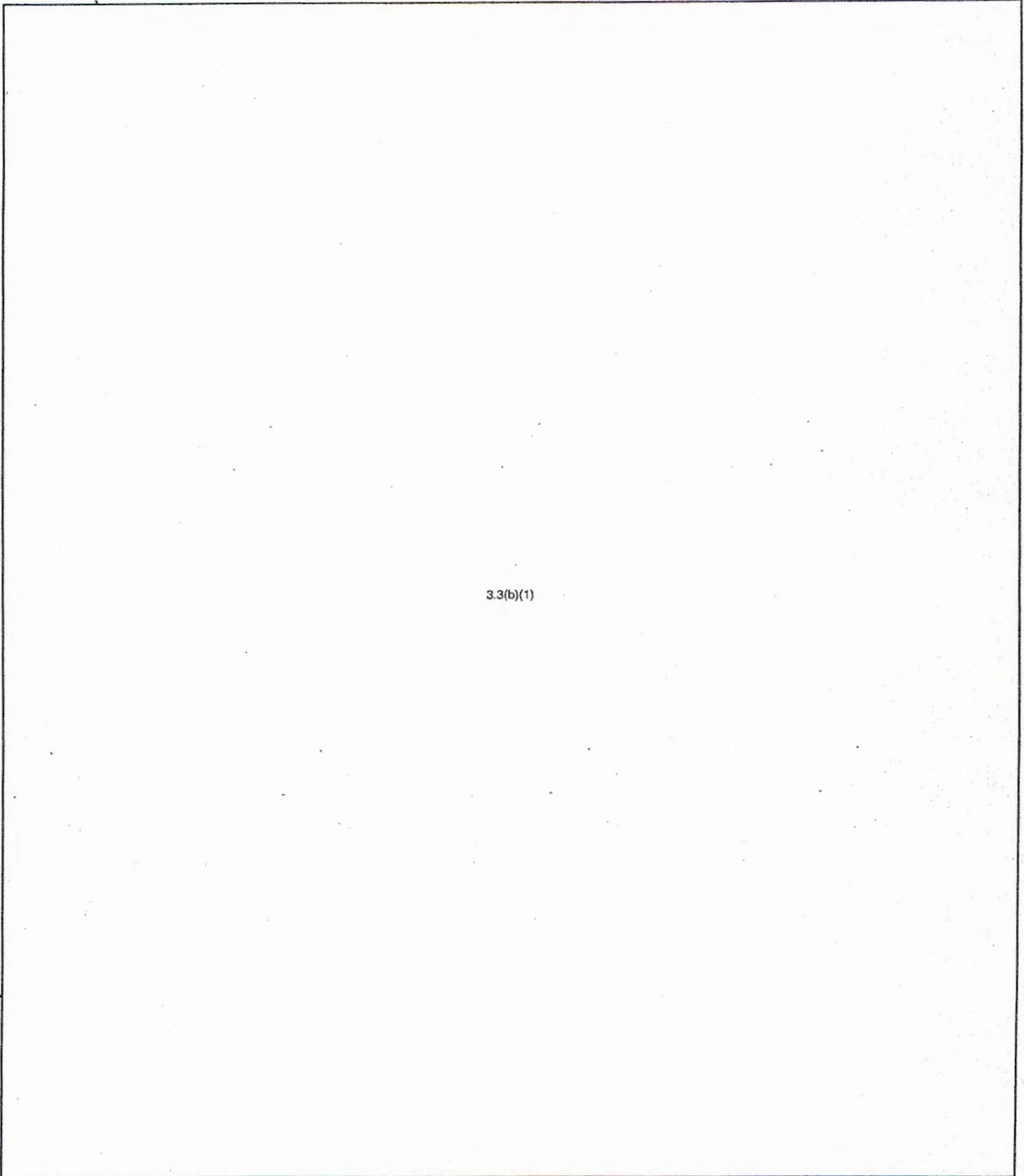
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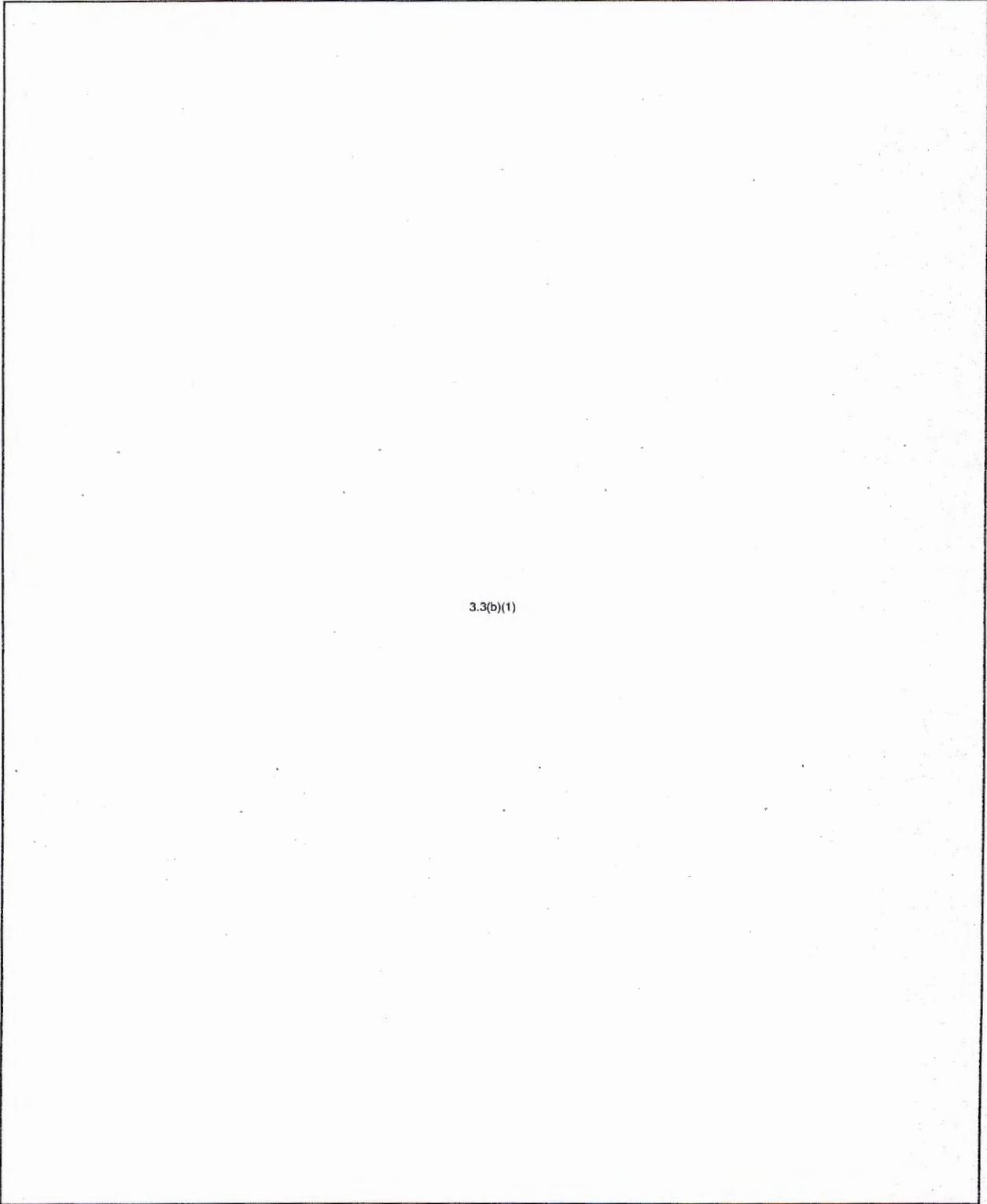
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*Smith*  
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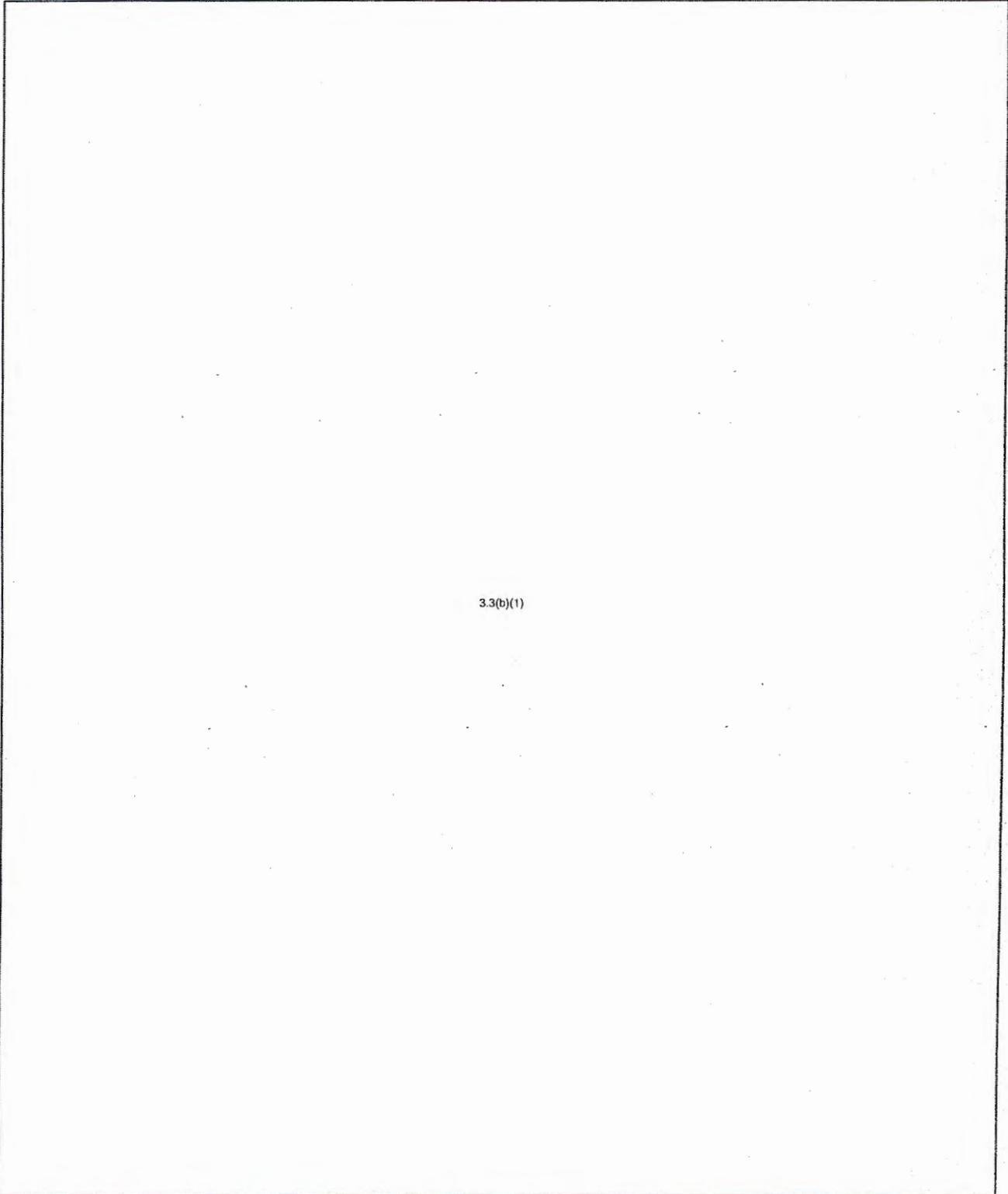


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DOCUMENT SOURCE/CLASS/DESCRIPTION

TO: PRES  HAK  FROM: ELIOT \_\_\_\_\_ ROGERS \_\_\_\_\_ LAIRD \_\_\_\_\_ CLASSIF: U \_\_\_\_\_ EXDIS \_\_\_\_\_ C \_\_\_\_\_ NODIS \_\_\_\_\_ LOU \_\_\_\_\_ EYES ONLY \_\_\_\_\_ S \_\_\_\_\_ RES DATA \_\_\_\_\_ TS   CODEWORD \_\_\_\_\_  SENSITIVE \_\_\_\_\_ PARIS MTG \_\_\_\_\_ NO FORN \_\_\_\_\_

DOC DATE: 111070 HELMS

SUBJECT: Recent Tests of Soviet SS-9

ENCLOSURES: ( ) ( ) NOT XEROXED FOR SUSPENSE FILE *Codeword attachment NOT Xeroxed*

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| INTERNAL ROUTING AND DISTRIBUTION |                                     |      |
|-----------------------------------|-------------------------------------|------|
| NAME: <i>Smith</i>                |                                     |      |
|                                   | ACTION                              | INFO |
| ADVANCE CYS TO HAK/HAIG           |                                     |      |
| STAFF SECRETARY                   |                                     |      |
| DIR, SECRETARIAT                  |                                     |      |
| SUB-SAHARAN AFRICA                |                                     |      |
| NR EAST/NORTH AFRICA              |                                     |      |
| EUROPE/CANADA                     |                                     |      |
| LATIN AMERICA                     |                                     |      |
| UNITED NATIONS                    |                                     |      |
| ECONOMIC                          |                                     |      |
| SCIENTIFIC                        |                                     |      |
| PLANNING GROUP                    |                                     |      |
| PROGRAM ANALYSIS                  | <input checked="" type="checkbox"/> |      |

**ACTION REQUIRED**

MEMO FOR HAK

MEMO TO PRESIDENT \_\_\_\_\_

REPLY FOR HAK SIGNATURE \_\_\_\_\_

REPLY FOR PRES SIGNATURE \_\_\_\_\_

MEMO \_\_\_\_\_ TO \_\_\_\_\_

RECOMMENDATIONS \_\_\_\_\_

JOINT MEMO \_\_\_\_\_

APPROPRIATE ACTION

ANY ACTION NECESSARY \_\_\_\_\_

CONCURRENCE \_\_\_\_\_

DUE DATE: *16 Nov*

COMMENTS: (Including Special Instructions)

*Cross ref w/ 21171 ←*

INTERNAL ROUTING

| DATE         | FROM         | TO         |
|--------------|--------------|------------|
| <i>11-14</i> | <i>Smith</i> | <i>Hak</i> |
| <i>11/25</i> |              |            |
|              |              |            |
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**ACTION REQUIRED**

*Info*

*HAK has seen*

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NOTIFY: \_\_\_\_\_

COPIES: (AS MARKED ABOVE)

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PAF  HAK APP'L

WHC \_\_\_\_\_ HAK MARGINALIA

SUBF  NS3 FORM REQUIRED

*RJ*

**NOV 30 1970**

*11/25*