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USIB-D-33.1/1 10 November 1958 Limited Distribution

UNITED STATES INTELLIGENCE BOARD

MEMORANDUM FOR THE UNITED STATES INTELLIGENCE BOARD

SUBJECT: Status of the Soviet ICBM Development Program

- 1. Attached is the report by GMIC on certain questions with respect to the "Status of the Soviet ICBM Program," prepared pursuant to direction of the Intelligence Board (USIB-M-4, 7 October, item 7).
- 2. As you are aware, this GMIC report and other materials pertinent to this subject will be made available to the special panel of highly qualified consultants who are to begin their discussions on Wednesday, 12 November. You may therefore desire to review this report prior to the special Board meeting with the consultants now set for Friday, 14 November, at 1430. We have been informed that additional copies of this paper are available through your GMIC member.

JOHN HEIRES
Executive Secretary

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ss# 8-11047

GUIDED MISSILE INTELLIGENCE COMMITTEE

5 November 1958

MEMORANDUM FOR: Director of Central Intelligence

SUBJECT : Re-examination of the Soviet ICBM Program

- 1. The Guided Missile Intelligence Committee has completed the re-examination requested in your memorandum of 9 October 1958 of the Soviet ICBM development program and has arrived at the following findings:
 - a. We now believe that the intelligence community erred in expecting a relatively high average rate of fire of ICBMs at Tyura Tam during the first year or so of the test program. It is now considered that the observed rates and grouping of firings at Tyura Tam are essentially as planned and that technical problems, if they exist, or the space program probably have not significantly influenced them. We expect that the rate of ICBM firings will continue to vary in the future; there will be periods of rather intensive activity and extensive periods of inactivity, such as have been observed at Kapustin Yar. However, the average over-all rate of firings must increase if the capability estimated below is to be achieved.

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- b. We believe that the ICBM program will continue on the presently estimated high priority basis.
- c. Our intelligence coverage is considered to have been sufficient to establish with a high degree of confidence the total number of Soviet test ICBM and space vehicle launching operations as reflected in Figure I, page 29 of attachment.
- d. We have examined several possible Soviet ICBM programs from the viewpoint of production, site construction, or troop training and find that a capability with 500¹ missiles is feasible within either two or three years after the IOC. However, the levels of activity which would have occurred to date under any of these possible programs would probably be so small as to defy present intelligence collection and analysis capabilities. There is insufficient evidence available to date on these types of activities to permit a determination of the present magnitude and pace of the Soviet program to develop operational capabilities with the ICBM system. The average rate of fire to date at Tyura Tam does not by itself determine the date by which the Soviets could achieve a capability with 500 ICBMs.

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It is pointed out that the numbers of missiles referred to in this paper (10, 100 and 500) are arbitrary and are not to be construed as representing Soviet stockpile goals.

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- e.2 In summary, we conclude that evidence which would warrant substantive change in NIE 11-5-58 has not been revealed during our re-examination except to eliminate the possibility of an initial operational capability (IOC) during 1958 and to emphasize the probability that the 1959 IOC will occur in the latter half of the year.³ In addition, it appears desirable to clarify what the threat could be as follows:
 - (1) From August 1957 to date, the Soviet ICBM threat has been largely psychological in nature. This psychological threat will change to a limited capability probably during 1959 (more likely during the latter half of the year), with about 10 missiles still in the developmental phase 5 but capable of use in the event of an unexpected war. These missiles constituting an IOC could have a maximum

The CIA member believes a Soviet emergency operational ICBM capability could occur prior to the end of 1958, if, in fact, it does not exist now, with weapons of unproven accuracy and reliability. The weapons and associated equipment representing this capability would, in his opinion, he prototype in nature allocated to field units for the purpose of system shakedown and of developing logistic, handling and operational techniques, which are considered to be as important to the ICBM (Continued on page 4)

³⁻⁴ The Air Force member believes there is an equal probability of the IOC occurring any time during 1959.

⁵ The CIA member believes the limited capability in 1959 will be with production missiles rather than R & D missiles. See dissent to para. 1.e.

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range of 5500 nautical miles, an accuracy of approximately 5 nautical miles CEP and a reliability after launch approaching 50 percent. It is also believed that sufficient numbers of trained personnel and launching facilities will exist in 1959 to fire these missiles. However, this limited capability obtained by using missiles from the middle phases of the developmental program would probably not be relied upon by the Soviets as an effective instrument in considerations of initiating a general war. Rather, it would be utilized as a propaganda and bargaining instrument and to be most effective it would be "inadvertantly" shown to Western or neutral observers. This IOC would provide "shakedown" organizations for the entire weapon system.

(2) The limited capability will continue to improve and could evolve as an operational capability, probably during

(Continuation of Footnote 2 from page 3)system development program as test flights. It is his belief that these weapons, limited in number, would be employed on an emergency basis only in the event of unplanned war in the near future. Furthermore, it is his belief that Soviet ICBM design was sufficiently firm in early 1957 to permit a Soviet decision to produce these weapons, which could result in initial deliveries of production ICBMs and equipment to operational troops in early 1959. There is no hard evidence, however, that this is or is not the case.

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the latter half of 1960,6 approximately one year after the IOC, with about 100 missiles. These missiles, some of which may be from research and development production, will have a maximum range of 5500 nautical miles, a CEP of approximately 5 nautical miles or better and a reliability after launch of at least 50 percent. It is also probable that in 1960, launching facilities which may be fixed, rail mobile with a maximum of fixed equipment, or a combination thereof, will have been prepared so as to permit full militarily effective employment in the first few hours of a general war.

(3) Assuming that Soviet preparations toward a substantial operational capability are already under way, that a first operational capability is achieved some time in the latter half of 1959, 7 and that the highest order of planning and accomplishment is achieved, we believe the USSR has the capacity to produce ICBMs, complete launching

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⁶⁻⁷ The Army, Air Force and CIA members believe that the Soviets could have an operational capability with about 100 ICBMs sometime during 1960 and with about 500 ICBMs sometime during 1961 or at the latest 1962.

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facilities, establish logistic lines, and train operational units at a rate sufficient to have an operational capability with 500 ICBMs at some time during late 1961 or in 1962. We believe the Soviets could consider this a militarily effective weapon system which could be relied upon to accomplish tasks in the event of war.

2. Detailed answers to question A through L posed in your memorandum are included in the attachment except for the full answer to L which is included in paragraph l.e., above.

EARL McFARLAND, JR. Colonel, USAF

Chairman, GMIC

Attachment: Re-examination of the Soviet ICBM Program

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⁸ See Footnote 6-7, page 5.



	TOP SECRET
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	A RE-EXAMINATION OF THE SOVIET ICEM DEVELOPMENT PROGRAM
	5 m
	5 November 1958
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	Prepared By
	Guided Missile Intelligence Committee,
	United States Intelligence Board
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The material contained herein was prepared by the Guided Missile Intelligence Committee (GMIC) in reply to Director of Central Intelligence letter of 9 October 1958 in which a re-examination of our estimates of the Soviet ICEM program contained in NIE 11-5-58 was requested. A number of specific questions were posed in this letter and each has been answered separately herein. As much of the reasoning behind our estimates is included, more detail than could be provided in NIE 11-5-58 is presented.

The evaluations made herein are those of CMIC and are not changes to NIE 11-5-58 which was approved by the Intelligence Advisory Committee on 19 August 1958.

ss# 8-11047

5 November 1958

GUIDED MISSILE INTELLIGENCE COMMITTEE

ATTACHMENT TO

RE-EXAMINATION OF THE SOVIET ICBM PROGRAM

A. "IS OUR INTELLIGENCE COVERAGE SUFFICIENT TO ESTABLISH WITH A HIGH DEGREE OF CONFIDENCE THE NUMBER OF SOVIET ICBM AND EARTH SATELLITE FIRINGS, INCLUDING THE NUMBER OF FAILURES?"

The confidence in our knowledge of the number of firings from

Tyura Tam increases with time. Prior to August 1957, our intelligence

coverage was minimal and there are some tenuous indications that

perhaps two, or at the very most four, firings may have taken place

at Tyura Tam. However, assessment of all evidence leads us to believe

that there were probably no missile or space vehicle firings at

Tyura Tam prior to August 1957. Further, we believe that any firings

to ranges on the order of 3500 nautical miles, or space vehicle

launchings from any location in the USSR would have been detected.

From August to November 1957, we believe the improving coverage was good enough to indicate the number of firings (four vehicles)

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but not good enough to indicate the degree of success or intended purpose of the first two operations, i.e., earth satellite vehicle, ICBM or both.

From November 1957 on, we have an exceptionally high degree of
confidence that has determined all launchings and attempted
 launchings at Tyura Tam, with ELINT confirmation
 It is considered very unlikely that the Soviets would require
or desire another long range missile test facility at this time,
but if they had one, we believe would have detected it.

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The CIA member believes that there is insufficient evidence to determine the success or failure of the three space vehicle attempts on 27 April 1958, 23 September 1958, and 11 October 1958. He believes that there is equal probability that the attempts were failures or unannounced space probes with perhaps limited technical objectives. The absence of Soviet public announcements and of intercepted telemetry on these occasions is not believed conclusive evidence indicating failure.

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B. "WHAT IS THE DEGREE OF LIKELIHOOD THAT THROUGH DECEPTION OR CONCEALMENT
THE SOVIETS HAVE PREVENTED US FROM DISCOVERING THE TRUE MAGNITUDE OF THEIR
ICBM TEST-FIRING PROGRAM? WHAT WOULD BE THE MOST LIKELY SOVIET METHODS OF
ACCOMPLISHING SUCH DECEPTION OR CONCEALMENT, IF ANY?"

The present intelligence collection program is so directed that it is improbable that the Soviets could have prevented the US from discovering the existence and general characteristics of their present ICBM test program through deception or concealment; however, consideration must be given to the capability of the Soviets to carry out an extensive deception program. The existence of deception in their missile program, at present, is considered improbable

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C. "WHAT PROGRESS TOWARD DEVELOPMENT OF AN OPERATIONAL WEAPON SYSTEM ARE
THE SOVIETS LIKELY TO HAVE MADE TO DATE FROM TEST FIRINGS AND ATTEMPTED
FIRINGS AT TYURA TAM?"

Prior to the first two Sputniks, there were two firings at Tyura
Tam and alleged by the Soviets to be ICBMs
(see FIGURE I). It is believed that all of these first four launching
were of the basic ICBM hardware. There were probably no previous
firings at Tyura Tam. In 1958 there have been four ICBM firings
which were at least generally successful, the last being on 24 May.
Since then there has been one probable failure which occurred on
10 July. These tests indicate successes of the airframe and propul-
sion system, but indicate little on the status of ICBM guidance or
nosecone re-entry

We are now inclined to believe that the last four "space vehicle firings", only one of which² (Sputnik III) was successful, represent such modifications to the basic ICBM hardware that we essentially exclude them in considering the development of the ICBM itself.

The above indicates that the Soviets are well on the way in the ICBM test program in so far as the airframe and propulsion systems are

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See Footnote 1, page 2.

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concerned, but that considerable additional testing, especially in guidance and nosecone re-entry (including warhead and fuzing) may still be required to obtain a proven missile system.

An operational capability for troop units with a complete missile system requires some production, a trained organization outfitted with ground handling equipment and launching sites (fixed or mobile).

Most of these requirements have relatively long lead-times so that a planned operational date must be established well into the future.

Consequently, early successes in the initial portion of the Soviet test program probably would not be exploitable into an initial operational capability (IOC with ten missiles) during the first year or so of the research and development testing unless such an operational program had been initially planned. In this case, a much larger number of firings and greater rangehead activities would be expected at Tyura Tam.

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The Central Intelligence Agency member believes a Soviet emergency operational ICBM capability could occur prior to the end of 1958 if, in fact, it does not exist now, with some weapons of unproven accuracy and reliability. The weapons and associated equipment representing this capability would, in his opinion, be prototype in nature allocated to field units for the purpose of system shakedown and of developing logistic, handling and operational techniques, which are considered to be as important to the ICBM system development program as test flights. It is his belief that these weapons, limited in number, would be employed on an emergency basis only in the event of unplanned war in the near future.

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Thus we conclude that any capability achieved during 1958 would primarily be a psychological threat rather than a military weapon and we would expect that a deliberate disclosure of test hardware might be made to enhance the psychological effect of the ICBM threat. We do not consider this to constitute an IOC.

Continuation of Footnote 3.

Furthermore, it is his belief that Soviet ICBM design was sufficiently firm in early 1957 to permit a Soviet decision to produce these weapons, thereby resulting in initial deliveries of production ICBMs and equipment to operational troops in early 1959. There is no hard evidence, however, that this is or is not the case.

An estimated Soviet ICBM developmental timetable, correlated with known events, has been prepared to justify this belief. While the facts are insufficient to firmly establish the existence of an emergency ICBM capability in the latter part of 1958, the representative of CIA believes that the estimated high priority requirement for such a missile system together with the known events warrants stating this belief.

Estimated Soviet Timetable for ICBM System Development

a. Pre-August 1957

Missile testing at Kapustin Yar has undoubtedly contributed to ICBM development in general experience with ballistic missiles and in specific flight testing of ICBM component and component assemblies. While none of the Kapustin Yar tests can be directly related to ICBM testing with confidence, the success of the Sputnik I and II launchings argues a high degree of competence with the vehicle. Additionally, the fact that the two Sputniks were launched so closely to the two prior ICBM launchings, indicates strongly that these two firings met all major test objectives fully. These highly successful operations with four successive large and intricate

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Continuation of Footnote 3

vehicles from Tyura Tam can only be explained by many prior tests of ICBM components having been made at Kapustin Yar. Successful and repetitious Kapustin Yar tests of large ICBM components would also have allowed making a firm decision to produce ICBMs before any missiles were test fired at Tyura Tam.

b. August - November 1957

The success of the first two ICBM tests (21 August 1957 and 7 September 1957) is not revealed by evidence except for certain Soviet announcements. The success of Sputnik I (4 October 1957) and Sputnik II (3 November 1957) was such that ICBM propulsion, airframe, staging and at least general demonstration of the complete vehicle in flight, would have confirmed the earlier Soviet decision to produce and to place prototype missiles with the using troops as early as possible. This action would probably result in completion of the first production ICBM in early 1959. The testing (flight and shakedown) during 1958 and early 1959 would then be of prototype vehicles.

c. January - May 1958

Four successful ICBM flight tests (30 January 1958, 29 March 1958, 4 April 1958 and 24 May 1958), one successful space vehicle launch (15 May 1958), and one event of unknown success probably of a space vehicle (27 April 1958) occurred during this period. Associated events during the ICBM flight tests lead to the belief that preliminary tests of guidance and nosecone re-entry were carried out. These events were: (1) 20 January 1958 event

(2) post 30 January

1958 event
(3) 13 March 1958
(4) 24 May 1958 - flight time for this missile

was in excess of the minimum energy trajectory flight time suggesting a lofted shot. During these ICBM tests, effort was apparently made to locate and recover the nosecone and in the case of (4) above, to obtain heating data for a simulated longer range shot.

d. June - October 1958

During the five month period, apparently only one ICBM was tested (9/10 July 1958) and this was probably a failure. Two launching attempts,

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Continuation of Footnote 3.

probably of space vehicles, were made (23 September 1958 and 11 October 1958) the success or failure of which cannot be determined. We are unable to account for this grossly reduced rate of testing on a reasonable basis except to explain it by allocation of vehicles from the prototype production line to marriage with the remainder of the system for shakedown and compatibility testing.

e. November 1958 - Early 1959

During this period, we believe there will occur an increasing capability, but still in limited numbers, to utilize the research and development vehicles in field testing status as emergency weapons in the event of need. The first production weapons probably will be appearing in field units during the latter portion of this period. Development of logistics, handling and operational techniques will be continued and largely completed. Flight testing will be continuing.

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D. "WHAT ADDITIONAL PROGRESS IS LIKELY TO HAVE BEEN MADE THROUGH COMPETENT
TESTING AT KAPUSTIN YAR PRIOR TO THE INITIAL TEST-FLIGHTS AT TYURA TAM?

ARE COMPONENTS LIKELY TO HAVE BEEN TESTED SUBSEQUENTLY AT KAPUSTIN YAR?

WITH WHAT PROBABLE EFFECT ON THE ICEM PROGRAM?"

Our evidence is not now sufficient to permit the selection of specific firings at Kapustin Yar prior to, or subsequent to, Tyura Tam firings as being primarily related to ICEM development. However, there is no question but that the Soviets have obtained a great depth of experience in the design, developing, and testing of ballistic missiles from the activity at Kapustin Yar -- experience which will significantly contribute to the success of any other space or missile program, such as the ICEM. It is considered that many of the components of the ICEM can be basically the same as those used on proven missiles or can be flight tested on them both before and during the flight test program at Tyura Tam. Especially do we wish to point to the early Soviet experiences with large rocket engines.

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^{4.} The CIA member believes that this answer inadequately accounts for the contribution of testing at Kapustin Yar. See footnote 3, page 6.



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The effect of this complementary testing at Kapustin Yar would be to reduce the development time and improve the reliability of the ICBM. This has been considered in our estimate, although we cannot measure the effect in development time saved.

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E. "IS IT LIKELY THAT STATIC TESTING OF ICEMS HAS TAKEN PLACE UNKNOWN TO US? WITH WHAT PROBABLE EFFECT ON THE ICEM PROGRAM?"

We are confident that a great number of ICBM engine tests have taken place at static test facilities at factories and the Kapustin Yar and Tyura Tam test ranges. We would not expect existing collection efforts to have been successful in identifying ICBM engine tests and we have no specific information on them. It is also likely that some missile firings at Kapustin Yar have used the same class engine⁵ as is used in the ICBM.

The effect on the ICBM program of such testing would be to reduce development time and improve reliability, but the extent cannot be estimated.

5 See Footnote 3, page 6

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F. "WHAT IS THE LIKELIHOOD THAT THE APPARENT SLOW RATE OF ICEM TEST FIRING REPRESENTS SERIOUS DIFFICULAY AND DELAY IN THE DEVELOPMENT PROGRAM?"

We expect the Soviets to follow the same general test philosophy at Tyura Tam which provided them with success at Kapustin Yar. The firing schedule may be modified to the extent permitted by the Kapustin Yar component testing and required by the size, cost and nature of the ICBM. Unfortunately, we have little good evidence on the early testing of any new missile at Kapustin Yar. However, it appears that in the early part of the programs there were several short periods of testing separated by relatively long periods of inactivity which could have been used for re-engineering and/or design. These were followed by periods of relatively high rates of fire separated by one to three month periods of inactivity. It was the high rate of activity through the Sputnik II launching and our initial estimate of Soviet test requirements, based to a great extent on the high launch rate observed during the latter phase of missile development at Kapustin Yar, that led us to expect a high missile firing rate at Tyura Tem. Technical problems probably have not been a limiting factor in the firing

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rate. Such factors as the size, cost and nature of the vehicle coupled with the use of proven components, as well as the effects of the space program and possible limitations on facilities, may have modified the normal pattern.

Consequently, we conclude that the firing rate at Tyura Tam is essentially as planned by the Soviets; however, the overall rate of fire must increase if the capabilities ascribed to them are to be achieved. (See Paragraph c. of cover memorandum.)

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G. "WHAT IS THE LIKELIHOOD THAT THE PROGRAM HAS ALREADY BEEN SUCCESSFUL
ENOUGH TO PERMIT THE USER TO ESTABLISH AN INITIAL OPERATIONAL CAPABILITY?

UNDER SUCH CONDITIONS, WHAT SORT OF CHARACTERISTICS MIGHT AN OPERATIONAL
ICBM HAVE AT PRESENT?"

If the Soviets had planned for an initial operational capability (IOC) in 1958, they should have launched at a much higher rate than has been observed.

As discussed above and in paragraph "H", a planned IOC date must be anticipated to provide for the long lead-time of items such as support equipment, launching facilities and training as well as the actual technical development of the missile. Therefore, the initial successes of the Soviet ICBM test firings in late 1957 or early 1958 could not be exploited into an operational capability in 1958.

Our information on the Soviet ICBM flight tests to date indicates general success with the airframe and propulsion systems but it offers little concerning the status of the guidance system for the ICBM and nosecone re-entry. Further, we believe these tests are insufficient to provide even the Soviets with the data necessary to determine such characteristics as reliability and accuracy under operational conditions.

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⁶ See Footnote 3, page 6

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We conclude that (1) the Soviets probably did not plan for an IOC in 1958, (2) their initial successes could not permit establishment of an IOC in 1958, even if they so desired, (3) even the Soviets could not determine the characteristics of the 1958 test ICBMs under operational conditions, and (4) in summary, the capability achieved during 1958 would be a psychological threat rather than a military weapon; we do not consider this as constituting an IOC.

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H. (QUESTION I IN DCI MEMORANDUM⁷) "WHAT ACTIVITY (E.G., MISSILE PRODUCTION, LAUNCHING AND HANDLING FACILITY CONSTRUCTION, TROOP

TRAINING) SHOULD BE UNDERWAY AT PRESENT, AND AT WHAT RATES SHOULD SUCH ACTIVITY PROCEED, IF THE USER IS TO ACQUIRE AN OPERATIONAL CAPABILITY WITH 500 ICBMs IN 1961 OR AT THE LATEST 1962?"

In NIE 11-5-58 we estimated that:

"---- the USSR has the technical and industrial capability to produce ICRMs, complete launching facilities, establish logistic lines and train troops at a rate sufficient to have, an operational capability ----- with 500 ICRMs, two or at most three years after the first operational capability date (i.e., some time in 1961, or at the latest in 1962)."

The two year period (January 1961 to December 1962) bracketed by this estimate would permit the actual types and levels of Soviet ICBM program activity to vary markedly.

In order to illustrate the kind and volume of activity which should have taken place and now be underway, we have selected a

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^{7.} The order of presentation of questions H and I in the DCI memorandum dated 9 October 1958, has been interchanged to provide better continuity for the reader.

^{8.} It is again noted that the numbers of missiles (10, 100, 500) referred to in this paper are arbitrary and are not to be construed as representing stockpile goals.

two end one-half year production program which assumes that initial deliveries of operational ICEMs from series production would be made to completed launching facilities in mid-1959, and that an operational capability with about 500 ICEMs would be achieved by the end of 1961, a point about mid-way in the period spanned in NIE 11-5-58.

Such a program, if now in being in the USSR, would have required acceptance of the basic system and missile design during the latter half of 1957 and a decision to equip production facilities necessary to meet program requirements based upon this accepted design.

In the event that this type of program were in progress in the USSR at the present time, the following activity would have occurred to date:

(1) Pilot line fabrication of development missiles. This research and development production must have been underway since early 1957. Design change would be incorporated into these missiles as a result of firing experience; however, such changes could not be basic changes in the system or missile design if the program schedules were to be met.

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- (2) Preparation of facilities for quantity production of system elements. Facilities required for missile final assembly and factory checkout (perhaps two plants) would now be in the final stages of initial line tooling and equipping with actual assembly operations about to begin. Production of equipment for ground guidance sets would be in its earliest stages.

 Production of ground support and handling equipment would also be in its initial phase. In order to achieve an operational force of 500 ICBMs by the end of 1961, with the first deliveries of production ICBMs to operational units about mid-1959, the production rate would reach a peak of about 40 units per month by the latter part of 1960. This postulated production program could involve a total output of about 750 units by the end of 1961 with the possibility that about 250 might be expended in testing and training.
- (3) Production and deliveries from subcontracting

 facilities. A program of the scope estimated could require
 more than a thousand major and minor subcontractors. By the
 present time, subcontractors for the manufacture of all parts
 of the ICBM should have been designated, interim production
 drawings furnished them, and initial production and shipment
 of some parts and components begun.

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- (4) Preparation of launching facilities. If hardened launching sites are contemplated, construction activity for the preparation of such facilities should be well underway in a few locations with others in earlier stages of construction. If soft above-ground sites are to be employed, site construction would probably be at a less advanced stage due to the shorter construction period required. In the event that a rail-mobile ICBM system with previously prepared launching sites had been adopted, the principal activity to date would probably have been the partial conversion and adaptation of one or more rolling stock plants in the USSR to the manufacture of special purpose rail cars or the modification of cars. Production or modification of some special rail units should currently be underway.
- (5) Training preparations. A very sizeable training program for military launching units would be underway at all major production facilities in the program, at specialist schools, and at the test ranges.
- (6) It is pointed out that the effort required to produce the numbers of missiles required for the assumed program is only a minor portion of the effort involved in the total

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activity required to produce the overall ICBM system, excluding research and development.

The wide range of activity described above, all of which is essential to preparing for later large scale production, would generate in the coming years a heavy and continuing flow of communications, travelers, materials, parts and equipment, between industrial facilities, launching site areas, military and administrative organizations, and the central authority controlling the entire program. Moreover, the administrative requirements of a program of this complexity and urgency would almost certainly result in an unusually high amount of detailed reporting on the status of the program and on problems being encountered from widely separated installations throughout the Soviet Union to the central authority, which would be attempting to exercise rigid control over all major aspects of the integrated program.

As yet, there is no firm evidence that a Soviet ICBM production and deployment program of the type and magnitude described above has actually been initiated or that any of the activity anticipated to date has, in fact, taken place. However, the levels of activities required at present to attain the assumed capability at even the earliest estimated dates (see first

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paragraph) could and probably would defy present collection and analysis capabilities.

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I. (QUESTION H IN DCI MEMORANDUM) "IS THERE ANY EVIDENCE TO SUPPORT THE PRESENT EXISTENCE OR PREPARATION OF AN OPERATIONAL ICBM CAPABILITY IN THE USSR? OF A PRODUCTION PROGRAM FOR ICBMS AND SYSTEMS EQUIPMENT? WOULD SUCH EVIDENCE BE EXPECTED, IN THE LIGHT OF OUR CURRENT COLLECTION CAPABILITIES?"

There is no evidence that the Soviets presently have an ICBM operational capability.

We have no evidence which can be directly related to the preparation of an operational capability such as the production of ICBMs and associated equipment, or the training of troop units. As discussed in "H", we would not really expect to see this data from our collection/ analysis system; there is some indirect evidence on production and site construction.

Polyarny Ural is the most suspect ICBM site location. There have been reports and inconclusive evidence

of the existence or construction of perhaps a dozen sites for unknown purposes in areas which would be appropriate for ICBM deployment, however, to date the association with missiles has not been established.

We believe our present collection/analysis system can determine the existence of an extensive hardened site construction program, although in order to determine its scope in the earliest stages, extensive additional collection and analysis effort is required.

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There is also evidence which indicates that the Soviets may be developing a rail mobile ICBM system. Here again, we cannot firmly prove or disprove this possibility.

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J. "WHAT IS THE LIKELIHOOD THAT THE USER IS EMPHASIZING SPACE FLIGHT PROGRAMS AT THE EXPENSE OF ICEM DEVELOPMENT?"

Publicity on US space achievement and success of Soviet Sputnik propaganda may put more pressure on the Soviets to emphasize space activity, even at some reduction in effort on their ICBM. To date, however, we do not believe there has been any appreciable interferences, but that overall, the Sputniks have actually contributed to the ICBM program. As discussed previously, the last four and many of the future space vehicle firings may not contribute significantly to the ICBM program. 9

There is no evidence which enables us to assess accurately the priority assigned by the Soviets to either the space or ICBM programs or the relative priority between the two programs. In the absence of intelligence to the contrary, we estimate that the ICBM program has been assigned the higher priority because the weapon program poses the most immediate and serious threat to US national security and fills a major estimated Soviet military requirement. On the other

9 See Footnote 1, page 2.

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hand, we cannot overlook the possibility that the space program enjoys equal or higher priority because of the detrimental effect on US prestige which Soviet superiority in space would have. The evidence which we have at the present time does not firmly prove either hypothesis. Therefore, we cannot state with conviction that the USSR is or is not emphasizing space programs at the expense of ICBM development. However, we do not believe that the space vehicle program has retarded the development of the ICBM to date.

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K. "WHAT OTHER FACTORS (E.G., A DELIBERATE SOVIET POLICY OF OBTAINING MAXIMUM BENEFIT FROM EACH TEST FIRING BEFORE THE NEXT IS ATTEMPTED) MAY EXPLAIN THE APPARENT SLOW RATE OF ICBM TEST FIRINGS TO DATE?"

The common view that the Soviets have launched ICBMs at a relatively slow rate is believed to result from knowledge of the high rates of fire observed for other missiles tested at Kapustin Yar during their latter phases of development and operational training. As discussed on the preceding pages, we do not expect a major change in the Soviet test philosophy nor do technical problems or interference from the launching of space vehicles appear to have affected significantly the rate of launch.

It is noted that the time interval between each shot did not in all cases allow time for the Soviets to feed back much information obtained from one firing into the next firing, although certain minor modifications could have been made. The firing rates are consistent with a high priority program.

Based on the latest analysis, we must conclude that the firing rates have been essentially as planned for this phase of the ICBM development program.

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L. "IN SUM, WHAT IS THE MOST LIKELY EXPLANATION FOR THE OBSERVED PATTERN

OF SOVIET ICBM DEVELOPMENT TO DATE, AND WHAT MODIFICATIONS, IF ANY, SHOULD

BE MADE TO OUR EXISTING ESTIMATES?"

(The answer to this question is contained in the letter of transmittal)

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FIGURE I

TYURA TAM MISSILE TEST RANGE FIRINGS 1957-58

