

TS #102375
TAB B
IAC-D-6/11.5
8 February 1956

US Estimate of Soviet Guided Missile Capabilities*

1. The USSR is engaged in an extensive guided missile program. We estimate that the Western Powers face a growing Soviet guided missile threat over the next several years. A threat to Western offensive capabilities is already beginning to appear in the form of increased Soviet air defense strength. This threat will probably soon be followed by improved Soviet offensive capabilities against US and Allied coastal areas and sea lines of communication, and in tactical operations. Later the threat will probably extend to all Allied base areas in Eurasia and its periphery, and ultimately to the entire US.

2. With the passage of time, the increasing size of the Soviet nuclear stockpile and the larger yields estimated to be available from nuclear warheads will make missiles an increasingly effective means of nuclear attack. However, we believe that for the next several years the USSR would rely primarily on high performance aircraft for the delivery of nuclear weapons. Nevertheless, the advantage of surprise and other considerations might warrant earlier use of missiles with nuclear warheads for certain purposes.

* The dates given in this estimate are the probable years during which small quantities of missiles could have been produced and placed in the hands of trained personnel of one operational unit, thus constituting a limited capability for operational employment. These dates are based on the assumption that a concerted and continuous effort began in 1948, and are those around which the missile could have been operationally tested and be ready for series production. However, an additional period (which would vary according to missile type) would be required before missiles could be produced in quantity and the necessary units trained and deployed. We estimate that at least an additional six months would normally be required for shift or conversion from pilot plant to series production, and an additional period to reach the planned production rate. Some 18 months to two years would probably be required for individual and unit training of each operational unit, although this period could to a considerable extent overlap the production period.

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Specific Missile Capabilities

3. Surface-to-Air Missiles. The USSR is probably devoting very high priority to producing such missiles to overcome its air defense deficiencies. We believe that it now has deployed, at least in the Moscow area, operational surface-to-air missiles. Their performance characteristics are unknown, but might be superior to those previously estimated. The low yield nuclear warhead which could be available after 1958 would greatly increase their kill probability.

4. Surface-to-Surface Ballistic Missiles. Although the USSR could employ nonballistic guided missiles from ground launchers, we believe that it would favor ballistic missiles because of their relative immunity to presently known countermeasures and their greater capability for achieving surprise. In view of growing Allied tactical nuclear capabilities in Europe the USSR will probably give high priority to producing ballistic missiles for support of its field forces. However, aside from these missiles the USSR will probably concentrate over the next years more on ballistic missile development than on quantity production. We estimate that:

a. Short Range. The USSR, in addition to shorter range ballistic missiles, could have had since 1954 an operational 350 mile ballistic missile with CEP of two miles.^{1/} We believe that the USSR has not developed a 500 mile missile.

b. Medium Range. The USSR could have ready for series production in 1955-1956 a single-stage, ballistic missile of 850-900 miles range, with a CEP of three to four miles. However, only a low yield nuclear warhead probably would be available for the next few years.

^{1/} CEP (Circular Probable Error) means 50 percent hits within the stated radius. All CEPs and ranges are given in nautical miles.

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c. Intermediate Range Ballistic Missile (IRBM). In 1958-1959 the USSR could have ready for series production a dual stage ballistic missile of about 1,600 miles range with a CEP of three to four miles. Large yield nuclear warheads would probably be available in 1959-1960. If the USSR were willing to accept a reduced range of 1,400 miles, this missile could be made ready for series production as early as 1957, but in this case only a low yield nuclear warhead would be available.

d. Intercontinental Ballistic Missile (ICBM). We now estimate that as soon as 1960-1961 the USSR could have ready for series production an intercontinental ballistic missile of 5,500 miles range, with a large yield nuclear warhead and a CEP of roughly five miles. Advent of such an ICBM would create an entirely new type of threat to the US.

5. Earth Satellite. We estimate that the Soviets are attempting to develop such a vehicle at the earliest practicable date and could have a relatively uninstrumented vehicle by 1958. A vehicle which could gather and transmit upper atmosphere scientific data could be available by 1963.

6. Air-to-Air Missiles. Because of its air defense weaknesses, the USSR has probably also assigned a very high priority to air-to-air missiles. In 1955 it could have developed a guided rocket with infrared homing. In the period 1955-58, it could develop an improved version with greater range. However, the Soviet guidance system would permit only tail cone attacks under generally fair weather conditions at the engagement altitude. In 1958-60 the USSR could probably have a new all-weather missile.

7. Air-to-Surface Missiles. The USSR also would almost certainly seek to produce in quantity any precision weapon available for effective HE antiship attacks. For this purpose it could now have available and would probably produce a rocket-propelled glide bomb, although limited to good visibility conditions. In view of its extensive bomber capabilities, we do not believe that the USSR would produce a long-range air-to-surface missile for attacks on Allied

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ports and bases over the next several years. In 1960, on the other hand, when we estimate that an all-weather air-to-surface missile with nuclear warhead could be ready for series production, there will probably be a high priority Soviet requirement for a weapon of this type because of the increased effectiveness of Allied air defenses around key target areas.

8. Submarine-Launched Missiles. The USSR will almost certainly have a requirement for submarine-launched missiles for nuclear attacks on US and Allied coastal areas. It could already have available improved V-1 types with nuclear warheads. In 1955, the USSR could have ready for series production a turbo-jet pilotless aircraft (nonballistic guided missile) with improved range, speed, and accuracy, and by 1958 its nuclear warhead yield could approach compatibility with its estimated accuracy and greatly increase its effectiveness.