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CENTRAL INTELLIGENCE AGENCY

OFFICE OF NATIONAL ESTIMATES

8 November 1952

**SUBJECT: SIE-5: THE SCALE AND NATURE OF THE SOVIET AIR DEFENSE
EFFORT 1952-54**

NOTE

**This estimate is the best assessment on which basic agree-
ment can be reached considering the evidence now available.
The IAC proposes to keep this subject under continuing review.
The present estimate does not attempt to assess Soviet air defense
capabilities relative to any assumed attacking force. The IAC
hopes that it will provide the intelligence basis for such an
assessment of Soviet air defense capabilities.**

USAF review completed.

NSA review completed

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THE PROBLEM

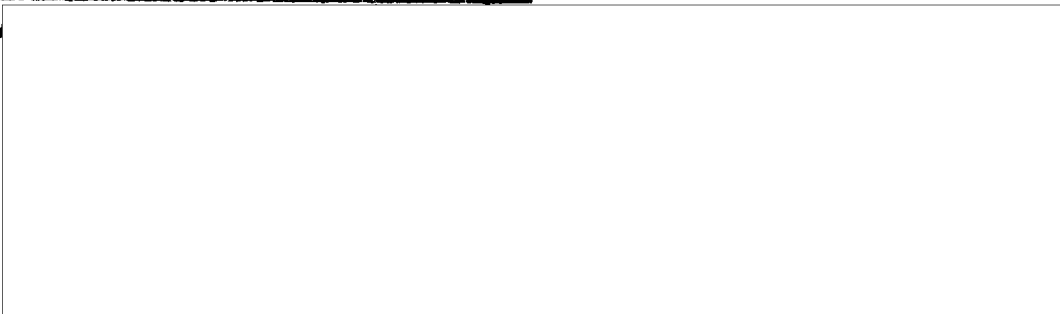
To examine the present and probable future scale and nature of the Soviet air defense effort through 1954. ✓

CONCLUSIONS

1. The USSR is carrying out an intensive program for the improvement of its air defense system, with a priority which is probably second only to the Soviet atomic weapons program. Although the USSR almost certainly faces numerous developmental and production problems, there appear to be no insoluble economic or technological limitations which would prevent the development and quantity production of high quality air defense material, provided that this program continues to receive sufficiently high priority.

2. The USSR's large and elaborate air defense network includes not only the forces assigned to PVO-Strany, the Soviet air defense organization, but also has available to it those active air defense

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resources of the Soviet army, tactical air forces, and navy not otherwise committed. The European satellite and Communist Chinese air defense forces add to and are integrated with the Soviet system. We believe that a total of about 12,000 fighters, including roughly 7,500 jets, are potentially available from these forces for the air defense of the USSR.

3. Because of the rapid Soviet progress in the electronic field, and corollary developments in interceptors and antiaircraft weapons, we believe that:

- a. The approaches to most important areas in the USSR are well covered by an early warning system (see paras. 37 and 38 and paras. 10-18 of Appendix B and map on page 27).^{2/}
- b. Soviet interception capabilities have considerably increased with the widespread use of MIG-15 interceptors and the introduction of modern GCI radar similar to current US operational models. Under conditions of good

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day or night visibility this equipment is probably capable of controlled interceptions of bomber flying at up to 450 knots and 40-42,000 feet, or perhaps higher.^{3/}

- c. The USSR has now some all-weather aircraft equipped with experimental AI radar. It may now have a few dozen all-weather aircraft with some form of AI equipment in operational units around a few key Soviet areas (see paras. 19 and 42 and paras. 20-21 of Appendix A).^{4/}

- d. Soviet antiaircraft capabilities are gradually increasing as new heavy AA guns (estimated at 100 mm.) with modern fire control radar and probably new directors become available in increasing numbers in key Soviet areas.

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These guns are capable of continuously pointed fire to 35,000 feet and barrage fire to 40,000 feet. However, we believe that these guns will not be capable of a high percentage of kills at these altitudes, even if controlled by the most modern fire control equipment (see paras. 44-45 and para. 26 of Appendix A).

e. Soviet low level defenses are also being improved by the introduction of a new medium AA gun estimated to be of 57 mm. calibre (see para. 25 of Appendix A).

f. Surface-to-air and air-to-air guided missiles could be available in limited quantities,

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Unguided rockets are probably in limited use. (See paras. 27-29 and paras. 36, 41 and 42 of Appendix A.)

4. However, the following deficiencies probably still exist in the Soviet air defense system:

a. At present there are probably insufficient numbers of trained personnel, modern interceptors, radars, and heavy AA guns to provide effective defenses for all important areas.

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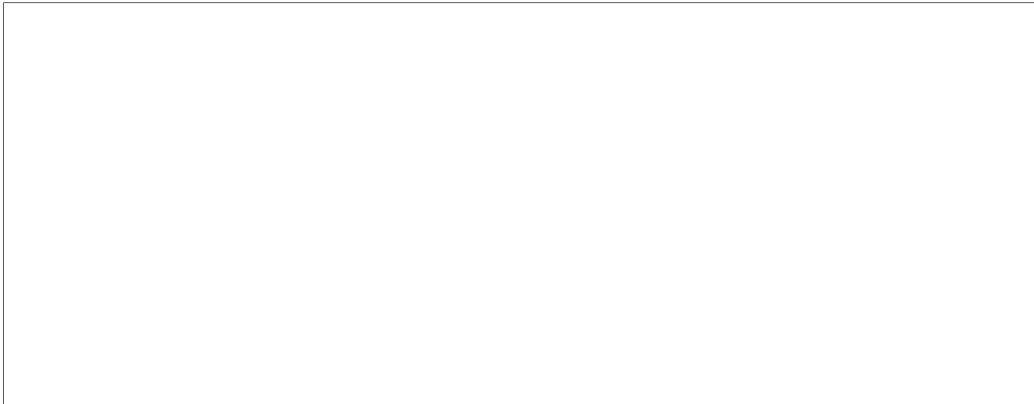
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c. Existing Soviet interception capabilities under conditions of poor visibility are seriously limited by the lack of adequate numbers of all-weather interceptors, and by the almost certain inadequacy of Soviet training and experience in all-weather interception techniques.

5. The USSR is making efforts to overcome these and other deficiencies and we believe that the effectiveness of Soviet air defenses will have improved substantially by the end of 1954:

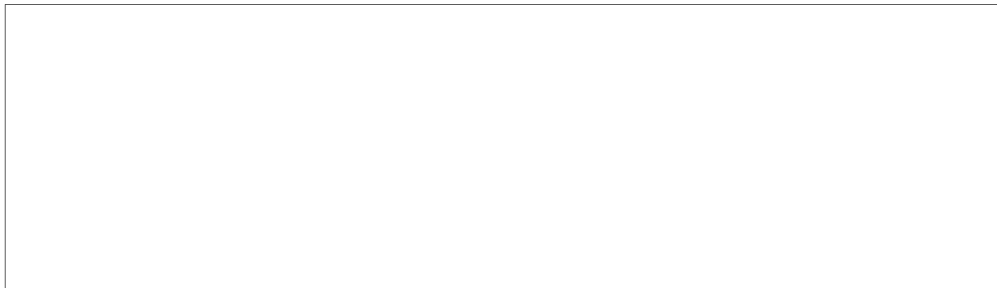
a. Substantial quantities of the new equipment already identified should become available in most important areas. For example, by mid-1954 the Soviet fighter forces will probably be entirely equipped with an estimated 10,000 jet fighters and interceptors, including 2,800-3,000 in the IA PVO.

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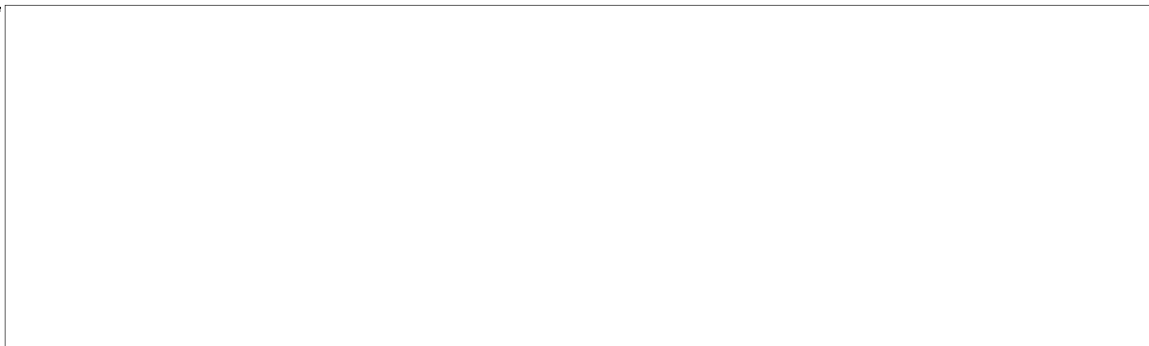
b. Soviet all-weather interception capabilities will almost certainly increase considerably although various deficiencies in training, maintenance, and experience probably will still exist. We estimate that by mid-1954, Soviet fighter strength probably will include several hundred of some type of true all-weather interceptors. 5/



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d. There will probably be other new developments, particularly in interceptors, radar, guided missiles, and rockets, designed to counter Western progress in offensive aerial weapons.

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