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CENTRAL INTELLIGENCE AGENCY

INFORMATION REPORT

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COUNTRY USSR

SUBJECT Possible Significance of "INTRODUCTION TO THE STATIS-
TICAL DYNAMICS OF SYSTEMS OF AUTOMATIC REGULATION" by
V. Soladnikoff, Moscow, Leningrad, 1952

[redacted]

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[redacted]

DATE DISTR. 9 NOV 53

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SUPP. TO

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- Previously an evaluation of the technical content of "INTRODUCTION TO THE STATISTICAL DYNAMICS OF SYSTEMS OF AUTOMATIC REGULATION", by V. Soladnikoff, has been undertaken [redacted]. It is impossible for an independent US observer to determine the state of the art in missile control from an isolated textbook. The most positive statement that could be made on the subject is that the subject book demonstrates a knowledge of all the theory necessary for the Soviets to undertake the construction of a correlation computer of the kind being worked on in the US for use in antiaircraft gun director systems. A correlation computer would obviate the instability and chatter introduced into complicated high gain feedback gun control systems [redacted]. This instability could have been introduced by noise in the radar command signal or the amplification of other extraneous noise introduced by the control system itself. [redacted]
- If the book itself were taken as a measure of comparison of the application of correlation techniques to antiaircraft artillery or missile control, it might lead to an erroneous conclusion. It was previously pointed out [redacted] that no equivalent English language book exists, although the techniques discussed are well known to US specialists in the field; and [redacted] we are working on the problem at least as hard as the Soviets are.
- It is interesting to note that whereas the US leaders in the field [redacted] are basically communications engineers concerned with the control of noise signal ratio in communications networks, the author of the subject Soviet book V. Soladnikoff, is basically a feedback control man. This would imply his preoccupation with the application of correlation theory to automatic controls rather than to communications systems. [redacted] on feedback theory [redacted] believe Soladnikoff to be one of the outstanding Soviet workers in the field.

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- 4. It has been generally accepted that in the field of theoretical mathematics and mechanics the **Soviets** have been outstanding but that they have had less success with practical applications. Since this is not consistent with some of the evidence on Soviet developments in applied science as learned from captured war materiel (the MIG 15, high frequency communications gear, and their rapid progress in the field of nuclear energy)

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Source is a [redacted]

data

theory [redacted]

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