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GUIDED MISSILE AND ASTRONAUTICS INTELLIGENCE COMMITTEE

20 July 1961

GMAIC CONTRIBUTION TO NIE 4 - 3 - 61

Scope Note

This contribution is concerned only with the capabilities of "Nth" countries, singly or in combination to develop and produce guided missile systems capable of delivering nuclear weapons. In most instances the capability in question is that of delivering a nuclear warhead on key targets within the USSR. However, in certain countries [REDACTED] 25X6 the potential enemy is nearer at hand and missiles of shorter range than those required to reach the USSR would be significant.

It is assumed for the purpose of this estimate that a nuclear warhead for a missile developed by an "Nth" country would weigh 3000 to 5000 lbs. The development of a missile system could precede the development of a nuclear weapon by an "Nth" country and would not necessarily be contingent upon the development of the nuclear component.

Of the countries considered by JAEIC to have a potential nuclear weapons capability, only the following countries are believed to have a

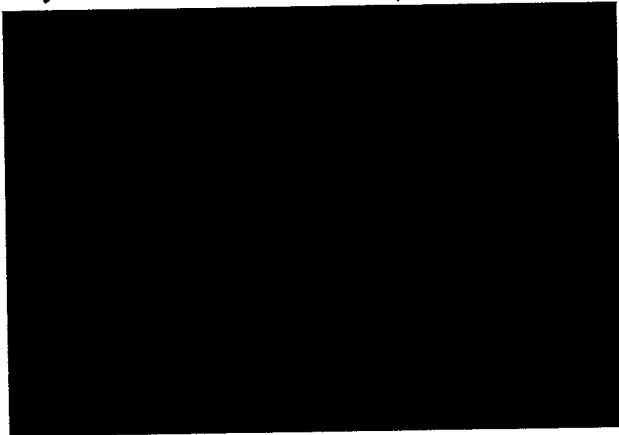
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sufficient potential for guided missile production to warrant treatment in any detail in this contribution:



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General

With the exception of France and to a lesser degree,  Communist China, none of the countries considered is believed to have taken more than preliminary steps toward the development of an offensive missile capability of any significance. The quality of the evidence available to make missile delivery capability estimates varies considerably among the countries considered. In general, we believe that the more advanced countries under consideration could develop a 200-500 nautical mile missile in five years from the time of its inception if the program were given a very high priority. About 8-9 years after decision would be required by these countries to develop longer range ballistic missiles. Less developed countries would require somewhat longer periods to

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develop ballistic missiles of these types.

The development of a submarine launched missile capability by any of the more advanced countries will in large measure be dictated by the status of submarine technology in that country. Compatible cruise missiles will be relatively easier to develop than ballistic missiles if there is already available an adequate background in aircraft development.

The quantity production of missiles would require an additional year or so after an initial capability had been achieved. We believe that economic limitations would hamper any missile program undertaken by individual "Nth" countries, but we have made no forecast of the manner in which these countries are likely to allocate their resources in the 1961-1971 period.

The general effect of assistance from the U. S. or USSR would be to shorten the time required for "Nth" countries to acquire an operational capability. We cannot be more precise than that because the nature of the aid would be crucial in determining the speed with which an operational capability could be acquired by individual countries.

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FRANCE (*No change from 7-2-61*)

The French have indicated that they are engaged in the early phases of development of a nuclear powered ballistic missile submarine. The current status and success of the missile aspects of this project is unknown. We estimate that this weapon system could be operational by 1970. There is no evidence that a sub-launched cruise missile is being developed.

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SWEDEN

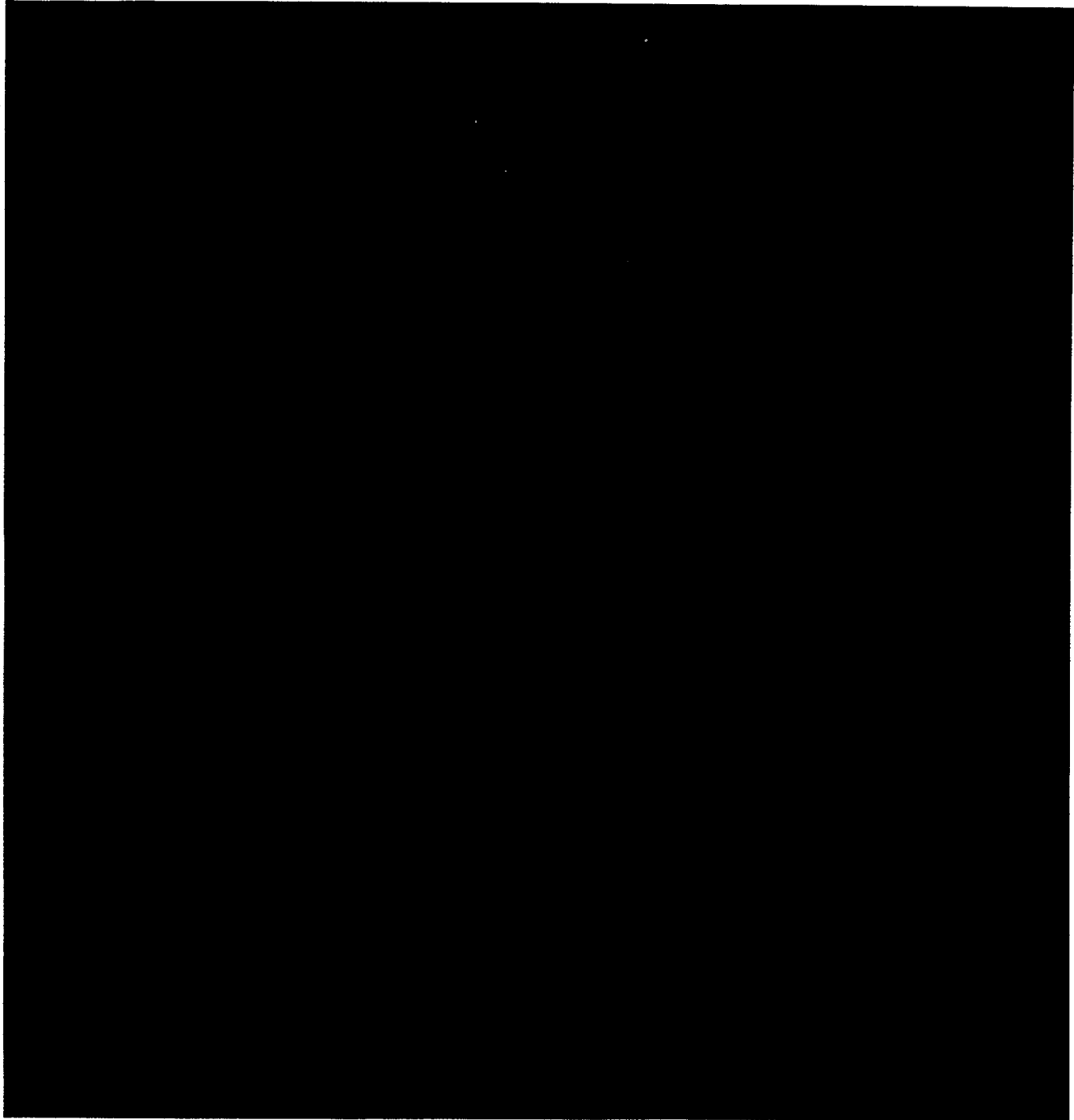
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Sweden today has the scientific, technical and industrial capacity to develop the missiles under discussion before the end of the period of this estimate if she were willing to engage in an all-out effort. To date Sweden's efforts have been directed toward the development of defensive capabilities, she has developed a number of air defense and short range surface-to-surface tactical missiles up to a 150 n. m. missile operational since 1958. However, the government decided last year to suspend development of newer types of air defense missiles and to rely on purchases abroad to fulfill Swedish requirements. If Sweden were to embark on a development program for long range missiles, she would have considerable difficulty in locating and establishing a test range for these missiles.

Although there is no evidence of such development, a cruise type surface-to-surface missile system with a range of a few hundred miles,

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capable of carrying a nuclear warhead, could be developed and installed
25X6 on Swedish submarines in three to five years without direct assistance.



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COMMUNIST CHINA

We believe that Communist China will go forward with the development of ballistic missiles, probably concentrating initially on a missile with a range of 200-500 miles capable of carrying a fission warhead. We believe they could have such missiles after 1963, or with considerable Soviet assistance somewhat earlier. We do not believe they could, by themselves, produce a 6500 n. m. missile necessary to give them a capability against the U. S. within the period of this estimate.

EUROPEAN COMBINATION

For the foreseeable future European cooperative ventures involving rocketry are likely to be limited to the field of space exploration.

*CIA reserves on this date.

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However, the fringe benefits to individual members in economic and missile delivery capabilities may well have far reaching implications in the near future.

The January 1961 Strassbourg Proposals sponsored by Great Britain and France for the development of a European space program has now acquired the official support of West Germany and plans for a European Space Research Organization (ESRO) are moving ahead.

Original plans, not yet finally accepted by the group, envision the investment of about \$200,000,000 over a 5 year period for the construction of a three stage vehicle and other initial expenses. A proposal has been made that the first stage be based on the British "Blue Streak", the second stage on an improved version of the French "Veronique" and the third stage of a new design. The costs of this project estimated by the group is as follows:

	Millions of dollars
First Stage	109.5
Second Stage	35.8
Third Stage	17.9
Experimental Rockets	19.9
Sundry Expenses	15.9
	<u>199.0</u>

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The initial planned contribution of individual states for a five year program are as follows:

	Million of dollars
Great Britain	66.5
France	41.0
West Germany	37.7
Italy	19.5
Spain	5.9
Sweden	5.8
Belgium	5.6
Netherlands	5.2
Switzerland	4.5
Denmark	2.7
Austria	2.6
Norway	2.0
TOTAL	<u>199.0</u>

At a meeting of the ESRO at The Hague in May 1961, the principal features of this program were set forth as follows:

First year - 20 probes into the outer atmosphere

Second year - 50 atmospheric probes

Third year - orbiting of a small satellite

Sixth year - orbiting of a large satellite

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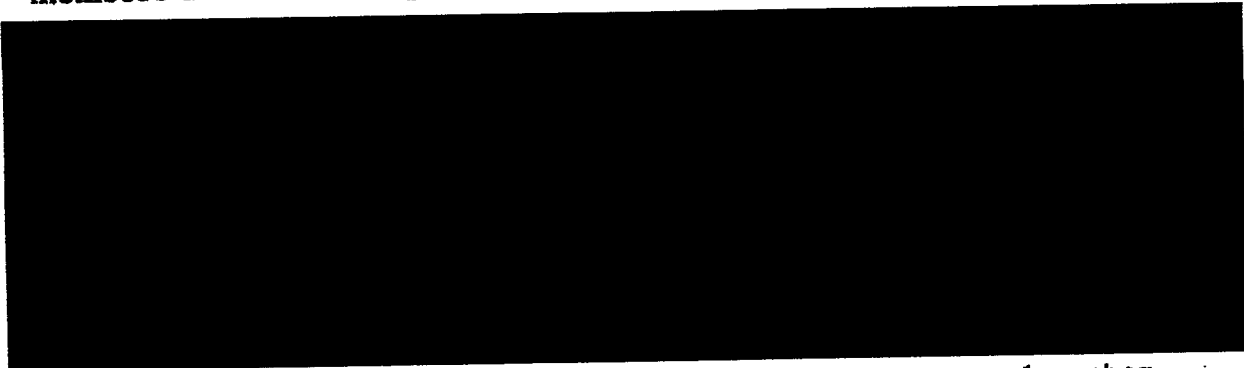
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No manned space experiments were envisioned in the program. It was proposed that ranges be located (a) at Kiruna, Sweden and possibly in Greenland for auroral studies (b) in the Canary Islands for polar and equatorial orbits and (c) at Colomb-Bechar in the Sahara for small satellite launchings.

We estimate that initial launching of a vertical probe under the auspices of the ESRO could occur in late 1962 or early 1963.

The time and economic burden involved in a space program would be substantially reduced by this cooperative venture. The important question is how much could the knowledge gained by the participating members aid them in acquiring independent missile delivery capabilities.


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The use of the "Blue Streak" as a booster for a European space launcher would contribute to the knowledge of the participating nations concerning the technology of large rockets. However, it is unlikely that this knowledge


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could or would be put to military use by the individual nation in the near future. 

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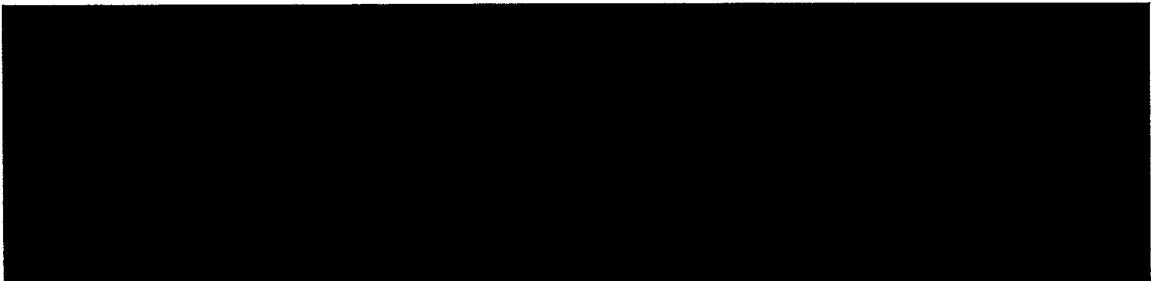
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Although France has an active missile development program underway, she seems to be heavily committed to solid propellants for military missiles. The other smaller nations, with the possible exception of Sweden, are not now capable of exploiting the information they might acquire from "Blue Streak".

There is little question that the general state-of-the-art in rocketry among the European nations will be given a boost by their participation in a cooperative program of space exploration. Moreover, it reduces the major political and technical obstacles which would face an independent effort.

OTHER COUNTRIES

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Italy has some capability to develop and produce the smaller

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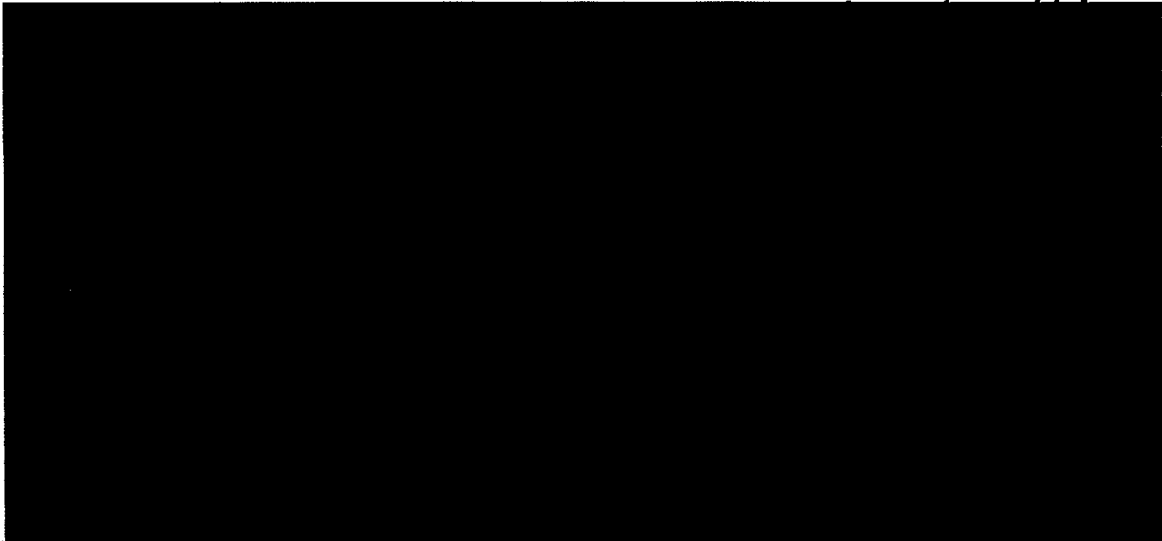
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types of guided missiles under construction, but her resources would be severely strained if she were to undertake an independent program for the development of large missiles. Italy could, however, make a significant contribution to a joint project with other European countries as a supplier of small components.

The Netherlands would also be able to make a significant contribution to a joint European missile effort, especially in electronics.

India has no native potential for missile development within the period of this estimate.

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