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**LIKELIHOOD AND CONSEQUENCES OF THE
DEVELOPMENT OF NUCLEAR CAPABIL-
ITIES BY ADDITIONAL COUNTRIES**

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Submitted by the
DIRECTOR OF CENTRAL INTELLIGENCE

The following intelligence organizations participated in the preparation of this estimate: The Central Intelligence Agency and the intelligence organizations of the Departments of State, the Army, the Navy, the Air Force, and The Joint Staff.

Concurred in by the
UNITED STATES INTELLIGENCE BOARD

on 20 September 1960. Concurring were The Director of Intelligence and Research, Department of State; the Assistant Chief of Staff for Intelligence, Department of the Army; the Assistant Chief of Naval Operations (Intelligence), Department of the Navy; the Assistant Chief of Staff, Intelligence, USAF; the Director for Intelligence, Joint Staff; the Atomic Energy Commission Representative to the USIB; the Assistant to the Secretary of Defense, Special Operations; and the Director of the National Security Agency. The Assistant Director, Federal Bureau of Investigation, abstained, the subject being outside of his jurisdiction.

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LIKELIHOOD AND CONSEQUENCES OF THE DEVELOPMENT OF NUCLEAR CAPABILITIES BY ADDITIONAL COUNTRIES

THE PROBLEM

To estimate the capabilities and intentions of additional countries to develop and produce an operational nuclear capability, i.e., nuclear weapons and compatible delivery systems¹ over the next decade; and to estimate the consequences of the acquisition of such a capability. (NOTE: In this paper we deal primarily with the potential of individual countries and certain groupings to develop nuclear weapons and delivery capabilities at present levels of external assistance, and the likelihood of their doing so. Any significant change in the level of external aid would clearly alter the basic estimates contained herein, both as to the timing and likelihood of such programs.)

CONCLUSIONS

1. Over the next decade, a number of countries could produce nuclear weapons and certain of them could also develop missile delivery systems provided they made a major and very costly effort and started their programs in the next year or two. (*Paras. 10-13*) However only France is known to have programs underway; Communist China almost certainly has started a weapons program. West Germany, Sweden, Japan, and India could initiate such programs but are unlikely to do so in the next several years unless there is a dramatic shift in the international situation.

2. France will almost certainly push its program and will probably not be deterred by any nuclear test ban involving the

¹The words "operational nuclear capability" are used with this meaning throughout the paper.

present nuclear powers unless such a ban were combined with effective nuclear disarmament including control of delivery systems. Provided France maintains a large-scale effort, by 1962-1963 it could have a modest operational nuclear capability, using light jet bombers and compatible fission bombs; by the end of the decade, it could have a significant missile capability with thermonuclear warheads. French development of an independent nuclear capability would probably encourage France's demands for a larger voice in NATO and in overall Western planning. (*Paras. 23-26, 45*)

3. Chinese Communist progress in the nuclear field is heavily dependent on Soviet aid. We believe this aid has been fairly substantial and increasing over the years, at least until recently. On the

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basis of the scanty evidence available, we now believe that the most probable date at which the Chinese Communists could detonate a nuclear device is sometime in 1963, though it might be as late as 1964, or as early as 1962, depending upon the actual degree of Soviet assistance.² Six months or so thereafter they could have a crude fission weapon deliverable by the BULL bombers which the USSR has already supplied. By the end of the decade, Communist China could have a 200-500 n.m. missile with a thermonuclear warhead, but probably not a longer range missile. If Soviet aid has been or becomes considerably greater, all these dates could be advanced substantially; a considerable decrease in aid would retard the program significantly. With the acquisition by Communist China of a nuclear capability, the incentives in other Asian countries for accommodation with Communist China would increase. *Japan* and *India*, however, might feel compelled to develop such weapons themselves. (Paras. 37-41, 49-50)

4. *West Germany* could probably produce independently an operational nuclear capability within 6-8 years. We do not believe *West Germany* would undertake an independent effort until it had found it impossible to obtain the benefits of a nuclear capability through NATO, bilateral arrangements with the US, or a joint

²The Assistant Chief of Naval Operations (Intelligence), Department of the Navy, disagrees with this sentence. See footnote to paragraph 40, which covers this point at length.

³The Assistant Chief of Staff, Intelligence, USAF, believes this sentence should read:

"On the basis of evidence available, and contingent upon continuation of the present level of Soviet assistance, it is estimated that Communist China could detonate a nuclear device by 1962."

Western European program. (Paras. 27-29, 46)

5. A *joint European effort*, with French-West German cooperation as its core, would spread the economic burden and, even without the UK, would probably accelerate the achievement of an initial operational nuclear capability with missile delivery by the participants by as much as two to three years. However, in the absence of US encouragement, or unless there is a basic loss of European confidence in the US, we believe it unlikely that such a joint effort, especially with UK participation, will emerge during the next several years. (Paras. 30-33)

6. *Sweden* could develop a modest operational nuclear capability with missile delivery 7 to 8 years after decision. Only in the event of a serious degeneration of the international situation, or if it loses hope for a nuclear test ban or effective disarmament, is *Sweden* likely to initiate a program. (Paras. 34-35, 47)

8. Any increase in the number of nuclear powers could raise the chances that nuclear weapons would be used. It would also increase the dangers which could flow from actions taken through miscalculation or desperation. It could also, however, engender greater restraint on international moves which could lead to military confrontations. It would in-

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crease the pressures throughout the world for a test ban, disarmament, and nuclear free zones. (Paras. 42, 44)

9. The relative position within an alliance of any country acquiring nuclear weap-

ons will be enhanced. Considerable strains in an alliance could result if the newly acquired capability encouraged the possessor to pursue policies inconsistent with those of its allies. (Para. 43)

DISCUSSION

I. GENERAL CAPABILITIES

10. The requirements for producing a few rudimentary nuclear weapons are relatively few: (a) access to supply of natural uranium; (b) the ability either to separate weapons grade uranium 235 from natural uranium or to extract the plutonium produced in a reactor; and (c) the ability to design, fabricate, and test an initial weapon. As indicated in Table I, many of these general requirements can now, or will within 10 years, be met by a

substantial number of countries. Moreover, as world uranium production and commercial sales of power reactors expand, it appears likely that, in the absence of international controls, even a country without direct access to natural uranium will be able to acquire uranium and produce enough fissionable material to fabricate at least a few crude weapons.

11. We do not believe that, in general, a country would manufacture and stockpile nuclear weapons in quantity without first having con-

Table I. SELECTED INDICATORS OF NUCLEAR WEAPON PRODUCTION CAPABILITY

Country	XX—Moderate XXX—Major	Domestic Avail- ability of Uranium	Nuclear Research Program	X—Small P—Potential	Industrial Resources Capacity
Free World					
France	XXX	XXX	XXX	XXX	XXX
West Germany	X	XXX	XXX	X	XXX
Italy	X	XX	XX	XX	XX
Belgium	—	XX	XX	X	XX
Netherlands	—	XX	XX	P	X
Canada	XXX	XXX	XXX	XX	XXX
Sweden	XX	XX	XX	XX	XX
Switzerland	—	X	X	P	XX
Norway	—	XX	XX	X	X
Japan	X	XX	XX	X	XX
India	XX	XX	XX	XX	XX
Australia	XX	XX	XX	P	XX
Bloc					
Communist China	XXX	XX	XX	P ^b	XX
East Germany	XXX	XX	XX	XX	XX
Czechoslovakia	XXX	X	X	XX	XX
Poland	X	X	X	P	X

^a Since the independence of the Congo, Belgium no longer has a domestic source of uranium.

^b The Communist Chinese probably have sufficient uranium metal available to support a power or a plutonium production program.

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ducted testing. The amount and duration of testing needed would vary depending upon the sophistication, efficiency, and yield of the required weapon. It is conceivable that one or two weapons of the most elementary type could be stockpiled without testing. On the other hand, to achieve a thermonuclear warhead suitable for use in a ballistic missile, numerous tests conducted over a span of several years would be required. The problem of providing adequate test sites would cause difficulty for several of the countries in Table I. Such countries, or those reluctant to test above ground for political reasons, might use underground testing techniques. However, such techniques would increase cost, slow down development, make instrumentation more difficult, and reduce the amount of diagnostic data obtainable.

12. To have an operational nuclear capability a country must not only have nuclear weapons but must also be able to deliver these weapons with a reasonable degree of accuracy against its potential enemies. In almost all cases, this would mean delivery by means of modern aircraft delivery systems or reliable surface-to-surface missiles. Only a few of the countries appearing in Table I will be able, at present levels of external assistance, to develop an operational nuclear capability within the next 10 years, and then only with a major national effort. Table II indicates the time periods which various countries would probably require in order to explode a nuclear device, produce their first nuclear weapons, and develop a capability to deliver nuclear weapons by missiles against selected targets.

13. The dates estimated in Table II are based upon the assumption that outside aid continues at no more than present levels. Major outside assistance, for example in the form of significant help in developing fissionable materials production facilities or guided missile production facilities, or in the form of advanced weapons design information, would advance these dates substantially. Significant technological breakthroughs could also shorten the development process, but probably would not enlarge the number of countries able to achieve a nuclear weapons capability.

II. PROBABLE PROGRAMS

A. General Considerations

14. While the above review of basic capabilities indicates the countries capable of developing independent nuclear capabilities, it does not answer the question of which ones will choose to do so. These decisions will be based upon a complex of economic, political, military, and psychological considerations.

15. The factors which would tend to encourage a country to undertake an independent nuclear weapons and delivery system program appear to us to include the following:

a. Doubts on the part of countries in alliances that the strength of a leading member of the alliance or its willingness to use its strength are sufficient effectively to deter a common enemy.

b. The desire, especially for those countries aspiring to big power status, to increase their national prestige, their voice within existing alliances, and their ability to pursue independent policies.

c. A belief that the development of nuclear capability is, on balance, the most efficient use of the manpower and resources available for defense.

d. A belief that a nuclear weapons program is necessary as a counter to the possible acquisition of a nuclear capability by potentially hostile countries.

e. A belief that a country having even a limited nuclear capability will possess a degree of independent power capable of restraining an opponent, or will be in a better position to impel its allies to support it under threat of precipitating a conflict.

f. A belief that even a limited capability may be sufficient to prevent a smaller nation from being attacked during, or being drawn into, a major conflict between the larger powers.

16. On the other hand, there are a variety of considerations which tend to inhibit the initiation of a nuclear weapons program:

a. The substantial economic and financial costs. Even a moderate program, limited to a dozen or two nuclear weapons, would re-

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Table II. ESTIMATED NUCLEAR WEAPONS AND SURFACE-TO-SURFACE MISSILE CAPABILITIES OF SELECTED COUNTRIES OR COMBINATIONS OF COUNTRIES, ASSUMING NO SIGNIFICANT CHANGES IN EXTERNAL AID

Country	First Device ^a	Missile Range (in nautical miles) ^c	Limited Operational Missile Capability ^b First Year for Missile with Thermonuclear Warhead. (Assuming major efforts in both missile and weapons fields)
France	2 tested (early 1960)	1,500 n.m.	7-8 years after decision
West Germany	3-4 years after decision	1,000 n.m. 200-500 n.m.	7-8 years after decision
Italy	5-6 years after decision	1,500 n.m.	10 years after decision
European Combinations	A coordinated French/West German program alone, but would accelerate the achievement of a limited operational missile capability, possibly by as much as 2-3 years. A "SIX" effort would further reduce the time, but not significantly, and also effect a further easing of economic and manpower burdens.		
Canada	1 year after decision	3,500 n.m.	7 years after decision
Sweden	5-6 years after decision	700 n.m.	9-10 years after decision
Japan	5-6 years after decision	200-500 n.m. 4,000 n.m.	9-10 years after decision ^d 10 years after decision
India	5-6 years after decision	200-500 n.m. 2,000 n.m. 200-500 n.m.	9-10 years after decision ^d After 1970 10-11 years after decision ^d
Communist China	1963 ^e	6,500 n.m. 200-500 n.m.	After 1970 10-11 years after decision ^d

^a A crude type fission weapon, weighing some 5,000 to 10,000 pounds with a diameter of 50 to 60 inches, could be available in a matter of months after the explosion of a first device. The development of a more sophisticated fission weapon would take a longer period and additional tests.

^b A limited operational missile capability is arbitrarily defined as 10 missiles, equipped with either a fission or thermonuclear warhead, together with essential ground support equipment, and in the hands of trained personnel at one or more sites.

^c For the non-Bloc countries these missiles are selected on the basis of range needed to reach Moscow or certain major Sino-Soviet Bloc cities or military installations closer at hand. For Communist China the shorter range missile would reach Japan, Taiwan, and South Vietnam; the longer range missile would reach major US targets.

^d A 200-500 n.m. missile and a compatible fission warhead could probably be developed about two years earlier than such a missile with thermonuclear warhead.

^e This estimate for Communist China is given as a specific year since we believe a program is already underway. For a discussion of the basis for this date, and the extent of Soviet aid, see paragraphs 37-40.

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quire large outlays. Such outlays would compete directly with the requirements for conventionally armed forces and probably also require the diversion of resources from high priority nonmilitary uses.

b. Doubts that the development of nuclear weapons is a prudent form of defense expenditure in view of the political inhibitions upon their use, the possibility of international agreements to restrict their development, and the need for conventionally armed forces to deal with a nonnuclear type of conflict, which in many situations might appear a more likely contingency than nuclear war.

c. For many countries, the lack of adequate testing sites, and the considerable technical and political problems likely therefore to be encountered.

d. A belief that they may be able to get an operational nuclear capability by transfer from friendly powers.

e. Doubts that a modest independent nuclear capability would be seriously regarded by the major powers and, therefore, that it would constitute in itself a significant restraint upon a major nuclear power.

f. General public apprehension of nuclear weapons and fear of nuclear fallout, plus a fear that a modest nuclear capability, particularly if established on sites in the homeland, would provoke rather than deter an attack in the event of general war between the great powers.

17. We recognize that these arguments for and against the initiation of a nuclear weapons program are often contradictory and difficult to evaluate. Furthermore, the weight of the factors may change as the scope of a program is revealed or as the political and strategic situation alters. It is also true that a country that has undertaken a program to develop a nuclear weapons capability would probably be reluctant to discontinue it unless the capability were acquired through help from allies. Nevertheless, we believe it is possible to suggest which considerations will have most weight in particular countries, and to indicate the likely national course.

18. We believe that Italy, Belgium, the Netherlands, Norway, and Switzerland will not initiate independent nuclear weapons programs. Cost considerations and doubts about the strategic and political value to them of an independent and very limited nuclear capability will operate to prevent a positive decision. Moreover, they probably do not exclude the possibility that a nuclear capability may be obtained, in time, more cheaply and easily from a major ally or friendly power, either by transfer or direct purchase. However, this judgment does not preclude the possibility that one or more of them will engage in joint efforts with allied nations. A fundamental change in the international climate might even prompt a decision to go ahead independently.

19. Both Canada and Australia are making rapid economic progress and are developing increasingly independent national characters. Nevertheless, we believe that each is much more likely to seek close cooperation in defense planning and some form of nuclear sharing with the US and UK than to undertake an independent nuclear weapons program.

20. We believe that the Eastern European satellite countries will not initiate nuclear weapons programs. Regardless of their potentials, we believe it extremely unlikely that the USSR would either encourage or permit them to do so. If the military forces of these countries ever come to possess a nuclear capability, the weapons would almost certainly be developed, or made available to them, under the closest Soviet scrutiny and control.

21. In India and Japan, strong emotional and political opposition to the development of nuclear weapons will almost certainly persist for some years to come. In both countries, particularly in India, cost and the reluctance to divert resources from present economic programs will also remain strong deterrents. However, the acquisition by Communist China of an operational nuclear capability, accompanied by an increasingly truculent Chinese Communist foreign policy clearly directed against them, would probably weaken resist-

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ance within India and Japan to the development of their own nuclear weapons. (See paragraph 50)

B. Individual Countries

22. Special considerations apply to the remaining countries with a nuclear weapons development potential: France, West Germany, Sweden, [] and Communist China. These countries are discussed at greater length in the paragraphs below.

France *Impressed by SNIE 221*

23. The French Government is following up its initial success in achieving a nuclear explosion by the development of a nuclear weapons and delivery capability. By 1962 France could have a modest number of fission weapons suitable for aircraft delivery. France will also probably strive to develop a thermonuclear weapon, and could conduct an initial test of a thermonuclear device by about 1964 and could have a thermonuclear weapon suitable for aircraft delivery a year or two later. France has ordered the production of 50 light jet supersonic Mach 2.0 bombers (DAUSSAULT Mirage IV) capable of carrying nuclear weapons to a radius of about 1,200 n.m., and with inflight refueling to 1,500-2,000 n.m. These bombers will probably be introduced into operational units at about the same time compatible fission weapons are available, i.e., 1962-1963. Two missile projects are also under study: a solid propellant missile with a range of 1,500-2,000 n.m. as well as a 200-500 n.m. surface-to-surface missile. If a decision to proceed is made promptly, the longer range missile could reach operational status by 1966 but probably could not be equipped with thermonuclear warheads until 1967-1968. Thus, while the French program is still in an early stage, if it is vigorously pressed, France by 1962-1963 could claim a limited operational nuclear capability; by the end of the period, it could qualify as a significant nuclear power.

24. How far and how fast the French push their program will depend upon such broad considerations as developments in NATO, par-

ticularly US policy on nuclear sharing, and in the general area of controlled disarmament. Even a test ban agreement between the US, UK, and the USSR would almost certainly not deter France from its present program, unless such a ban were combined with effective nuclear disarmament including control of delivery systems. While the program could also be influenced by domestic political trends in France, we believe that any French government, with the exception of one dominated by radical leftist forces, will probably continue to press forward in the field of nuclear capabilities.

25. The decision to acquire a nuclear weapons capability was made several years before de Gaulle came to power in 1958. It was based in large part on a belief that France could not re-establish what it believed to be its rightful place in the councils of nations, particularly in the Western camp, unless it possessed the weapons regarded as symbols of national power. The French believe that such a capability could give it some capacity—even if limited—to restrain potential enemies. France probably also believes that if the continental European countries decided to develop a joint nuclear capability, France's headstart would entitle it to a leader's role. What France wants is either an operational nuclear capability of its own making, or, at a minimum, such a capability furnished in part by its major allies but under French control.

26. It will not be easy for France to complete an independent program. The financial and economic costs necessary to achieve a capability will be high, probably higher than the French have estimated. The program will decrease France's ability to devote resources to other ends such as the development of the countries of the French community, and to NATO, which will cause strain with France's allies. The French will press for increased US support and cooperation, in order to reduce the economic burden. However, in the absence of effective disarmament, we believe the French will go ahead with their program.

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West Germany

27. The foreign and military policy of West Germany continues to rest on the principle that the country's security against the Soviet Bloc depends on a strong and cohesive NATO in which US power and leadership play the central role. At the same time, there is evidence that the West Germans are sensitive to any indications that they are considered to have a second-class status in the alliance. There are indications of growing official and popular support for strengthening the armed forces by acquiring modern weapons, including nuclear weapons. Furthermore, Adenauer and other German leaders have expressed doubts as to whether the deterrent effect of US nuclear capabilities will continue to be as great as heretofore. As a consequence, the Federal Republic is casting about for additional means to inhibit Soviet aggressive action in Western Europe, and to increase its voice in Western forums.

28. We do not believe that the West Germans now have any definite plans for developing an independent nuclear capability. Moreover, we believe such a course highly unlikely, at least for the next several years, since the obstacles are considerable. Treaty restrictions and lack of space for testing constitute immediate hurdles to an independent effort. Furthermore, to undertake a nuclear weapons program would probably involve serious political dissension within West Germany, and act as a provocation to the USSR at a time when the overall West German military strength is still limited.

29. We believe it likely, therefore, that West Germany will seek for the benefits of a nuclear capability by other means. Initially emphasis will be given to developing arrangements within NATO whereby MRBMs would be stationed in continental Europe, including West Germany, with control not vested solely in the US, or arrangements within NATO under which the West Germans could: (a) obtain nuclear warheads under certain stipulated conditions, and (b) also be able to produce and deploy missiles (including MRBMs).

Either of these arrangements would probably satisfy the West Germans for some time. If no such arrangements evolved, however, the West Germans would then probably seek bilateral arrangements with the US, and if this proved unsuccessful, participation in some form of European cooperative effort to produce an operational capability. Failing all these, the West Germans might believe that they were faced with a choice between developing independent nuclear capabilities, and making some political accommodation with the Bloc. Such a situation, if it arises, is probably still some distance in the future and we cannot say at this juncture what decision would be made.

Western European Groupings

30. Extensive cooperation between France and West Germany, especially within the framework of a larger continental European arrangement, would substantially reduce both the time and economic burden involved in developing nuclear capabilities from a national base. Moreover, it would remove or mitigate substantially the major political and technical obstacles facing an independent West German effort. European cooperative action on many levels, especially within the Common Market grouping, tends to improve the climate for cooperation in this field. Nevertheless, we believe it unlikely that any significant cooperation in the nuclear weapons field between continental European countries will develop during the next several years, at least without US urging.

31. Like most European countries, France is fearful of the possible consequences of West Germany's obtaining a nuclear capability. Moreover, at least so long as de Gaulle remains in power, it is unlikely that major shifts will be made in a strictly national effort which heretofore has gained much prestige for de Gaulle and France. In a more general vein, and looking beyond de Gaulle, France will also probably continue reluctant to enter any arrangements which would reduce its freedom of action, unless under dramatic external pressure.

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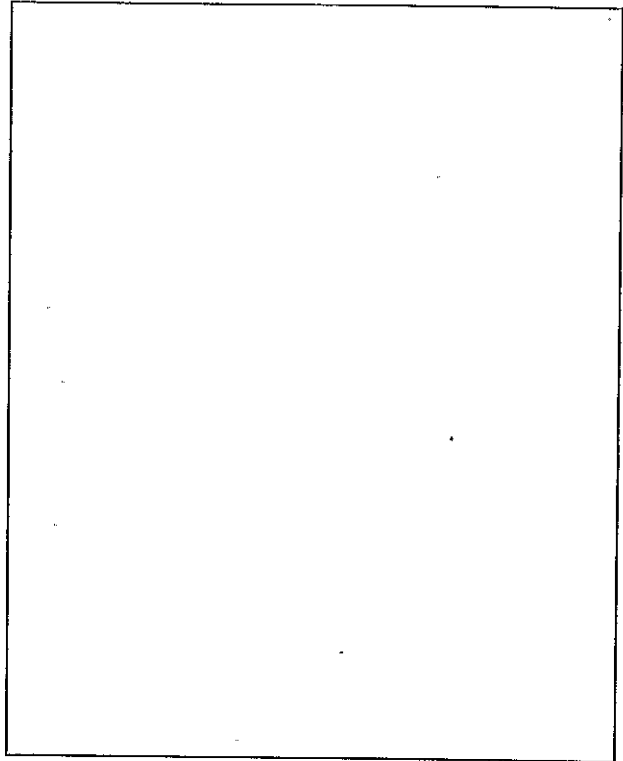
32. In the present atmosphere of international politics—and probably for the next several years—West Germany, and other European countries are unlikely to press for an independent joint European effort in the nuclear weapons field. These countries clearly recognize that they are now dependent upon the US for their basic security. Many Europeans also feel that such an effort would have to include the UK if it was to be timely and effective. In a situation where continental nations appeared ready to make a joint effort, the UK would undoubtedly be under considerable pressure to join, partly in an effort to maintain maximum influence over West German nuclear activities. However, it is unlikely that the UK would take such a step without US encouragement or unless it lost basic confidence in the US. Such a loss in confidence would probably occur much later in the UK than in France or other European countries.

33. The idea of a Western European cooperation in producing nuclear weapons will, however, probably persist. Moreover, during the extended period of this estimate it could develop significant momentum, particularly on the continent, if it appeared that the US capability or resolve to defend Europe had markedly been impaired. Nevertheless, it is unlikely to be translated into action until there is a conviction that the cooperative effort is both necessary and potentially effective.

Sweden

34. To date, Sweden has avoided making any clear-cut decision in regard to a nuclear weapons program. Military leaders and conservative political elements, as well as some members of the governing Social-Democratic Party (SDP), have agreed that an operational nuclear capability would discourage Soviet attack on Sweden in the event of hostilities in Western Europe between Soviet and NATO forces. Basic nuclear research of high quality is continuing. However, the economic and financial costs, the strong opposition within the SDP, and the fact that it will probably be at least several years before enough domestically produced plutonium becomes available for weapons production and testing, have all combined to keep a decision in abeyance.

35. Many Swedes, and particularly those in the Social-Democratic leadership, continue to hope that the international climate will develop so as to obviate the need to make a decision. A nuclear test ban or positive steps toward disarmament agreed upon by the major powers—or even a reasonable hope that one or other would soon come about—would probably be sufficient to prevent a positive decision. If such hopes prove illusory, and especially if other countries have initiated nuclear weapons programs, the government will probably decide to produce nuclear weapons. A serious degeneration of the international situation would probably cause the Swedes to adopt a crash program and to endeavor to purchase nuclear materials or even weapons from Western sources.



Communist China

37. We believe the Chinese Communists have given a very high priority to a nuclear weapons program. They almost certainly consider that a demonstration of their capability to produce nuclear weapons would confirm their claim to great power status. We believe that

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the Chinese Communists will carry their nuclear weapons program forward as rapidly as feasible.

38. Our evidence with respect to Communist China's nuclear program is scanty as is our information about the nature and extent of Soviet aid. In what we estimate to be the present state of Chinese Communists competence, the carrying out of fissionable materials production programs requires significant Soviet assistance in the form of technicians, designs, and equipment. As we have estimated earlier, we believe that the Soviets have been moving at a deliberate pace in assisting the Chinese in the nuclear field, seeking to hold Chinese impatience and discontent at a level consistent with the Soviet view of the best interests of the Sino-Soviet relationship.⁴ Recent evidence strongly suggests that in the past the USSR has given the Chinese Communists more technical assistance toward the eventual production of nuclear weapons than we had previously believed likely. This evidence is insufficient to establish how much assistance has actually been given, although we believe the aid has been fairly substantial and increasing over the years, at least until recently.

39. The USSR has provided Communist China with a nuclear research reactor and is training nuclear scientists in the Joint Institute for Nuclear Research at Dubna, USSR. The exploitation of native uranium resources has been underway, with Soviet assistance, since 1950. Over 10 deposits are now being worked, and we believe that ore with a uranium metal equivalent of several hundred tons is being mined annually and retained in China. The Chinese Communists have probably initiated the processing of uranium ores into metals, and this leads us to believe they are currently building a plutonium production reactor. Although there is no conclusive evidence, there are strong indications that they may also be building a U-235 gaseous diffusion plant.

⁴For a fuller discussion of Sino-Soviet attitudes and relations in this matter, see NIE 100-3-60, "Sino-Soviet Relations" dated 9 August 1960, paragraphs 41-51.

40. On the basis of the scanty evidence available, we now believe that the most probable date at which the Chinese Communists could detonate a first nuclear device is sometime in 1963, though it might be as late as 1964, or as early as 1962, depending upon the actual degree of Soviet assistance.^{5 6} Given direct Soviet assistance in fissionable materials, designs, and fabrications, the Chinese could produce a nuclear detonation in China at almost any time in the immediate future. On the other hand, if as a result of Sino-Soviet dissensions there were a lessening of Soviet assistance in the nuclear field, the Chinese Communist progress would be substantially retarded.

41. While the explosion of a nuclear device would give the Chinese Communists political and propaganda rewards, they would almost certainly proceed to create an operational nuclear capability as quickly as feasible. However, it will take them several years after the explosion of a nuclear device to produce a significant stockpile of weapons. Moreover, given economic limitations and the realities

⁵The Assistant Chief of Naval Operations (Intelligence), Department of the Navy, believes that the discussion in paragraphs 44 through 51 of NIE 100-3-60, approved by USIB on 9 August 1960, is still valid. He considers that available new evidence is insufficient to substantiate the increased Chinese Communist capabilities that would permit detonation of a nuclear device at an earlier date than what was estimated only slightly more than a month ago. Moreover, the current dissensions between the Soviet Union and the Chinese Communists, and the reported withdrawal of a significant proportion of Soviet technicians from Communist China may retard Chinese Communist progress in the nuclear field. In addition, he considers that this estimate should include a discussion of the possibility that the Soviets will provide the Chinese Communists with a simple nuclear device for prestige purposes without materially enhancing their nuclear weapons capability.

⁶The Assistant Chief of Staff, Intelligence, USAF, believes this sentence should read:

"On the basis of evidence available, and contingent upon continuation of the present level of Soviet assistance, it is estimated that Communist China could detonate a nuclear device by 1962."

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of geography, they would probably rely initially on aircraft as delivery vehicles. They have a few piston medium bombers of the BULL type, which could reach Japan, Taiwan, Okinawa, South Korea, and South Vietnam, as well as additional areas in Southeast Asia. In the next few years we believe they may receive some jet medium bombers from the USSR. We believe that they will also go forward with the development of ballistic missiles, probably concentrating in the first place on a missile with a range of 200-500 n.m., capable of carrying a fission warhead. Such missiles would give them coverage of most of the targets mentioned above. If deployed in Tibet, such missiles would also give coverage of the major cities of northern India. We believe that they could develop such missiles by 1968-1969 or, with considerable Soviet assistance, much earlier. We do not believe they could, by themselves, produce the 6,500 n.m. missile necessary to give them a capability against the US until well after 1970.

III. CONSEQUENCES OF A SPREAD OF NUCLEAR CAPABILITIES

42. Certain general consequences of even a small increase in the number of countries having nuclear weapons can be predicted. The mere fact that more countries had the ability to use such weapons would result in some increase in the elements of danger arising from world tensions. Indeed, even the stationing of nuclear weapons on foreign soil and training indigenous forces in their use is not without risk. The acquisition of nuclear weapons by more countries could magnify the consequences of acts based on miscalculation or taken through desperation or irrationality. The danger has long existed that such acts, though local and limited in origin, could expand into situations in which there is a real risk of war between the US and USSR. The spread of nuclear weapons, however, would inject into such situations a factor of unknown but critical significance. On the other hand, the recognition of this and of the consequences of nuclear war could induce the nuclear powers, as well as others, to exercise or try to impose greater restraint on international

moves which might lead to military confrontations.

43. Within a power grouping the relative position of any country acquiring nuclear weapons would change, e.g., France in NATO, or Communist China in the Sino-Soviet Bloc. Strains could develop within the alliances, particularly if the newly acquired capability encouraged the possessor to pursue policies inconsistent with those of its allies. Some other countries would probably press their allies for nuclear weapons or at least a sharing of nuclear technology.

44. Any significant addition to the number of nuclear powers would increase the pressure among the peoples of the world and the governments of uncommitted countries for concrete steps towards disarmament, the banning of nuclear tests and weapons, neutralized zones, and the like. This would give greater scope for the propaganda of those countries anxious to identify themselves with opposition to nuclear weapons.

45. With respect to specific countries, the development by *France* of actual weapons would encourage its demands for a larger voice in NATO and, indeed, in the whole world strategy of the West. The acquisition of an independent nuclear capability by France, or by a continental Western European grouping, could add to the factors deterring Soviet aggression against Western Europe and thus in some degree contribute to stability in East-West power relations.

46. The prospects of *West Germany* acquiring nuclear weapons would be unwelcome to other NATO countries, particularly the UK. The USSR and its European satellites would also look with particular dismay on West German nuclear arming and would exploit the fears of West Germany's allies that Germany again is getting out of hand. These apprehensions could be raised to dangerous levels were West Germany to undertake independent production of such weapons, although we believe it unlikely that the USSR would counter such a step by direct military action unless West Germany appeared to be isolated from US political and military support.

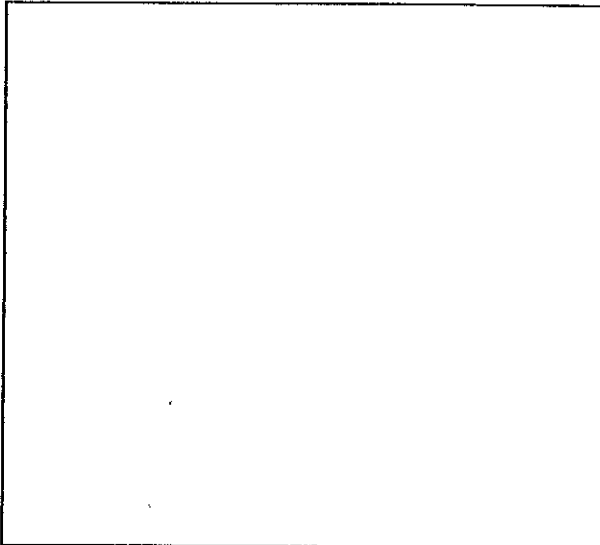
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47. If *Sweden* acquired nuclear weapons, the reaction in both the West and East would be minimal. It would be a subject for Soviet propaganda, but Western countries might welcome the development as reinforcing Sweden's neutral posture.



49. The acquisition of nuclear weapons by *Communist China* would have important effects on its relations both within and without the Sino-Soviet Bloc. The USSR probably has serious misgivings as to the effect of such acquisition on Sino-Soviet relations, fearing that it will prejudice the USSR's claim to undisputed leadership of the Bloc and lessen the degree of Soviet influence on Communist Chi-

nese actions, particularly those which might risk war with the US. The Soviets have nevertheless felt that they had to extend some aid to the Chinese Communists. The pace of Soviet aid has been deliberate and there has been no apparent assistance in the field of missile delivery systems.

50. The acquisition of nuclear weapons by the Chinese Communists would probably increase the intransigence of Chinese foreign policy, particularly towards its neighbors. The prestige of Peiping would rise in South-east Asia and the incentives for accommodation in such countries as Burma, Cambodia, Thailand, and even South Vietnam and Indonesia would increase. A demand by Nationalist China, the Philippines, and South Korea for a nuclear capability of their own would probably ensue. Communist China's acquisition of nuclear weapons capability would face *Japan* with a critical situation, probably leading to a polarization of forces between those advocating strict neutralism (or even accommodation with the Bloc), and those favoring the strengthening of ties with US and possibly acquisition of their own nuclear capability. The outcome of such an internal dispute cannot now be predicted. *India's* concern would also be great, and the government might decide to undertake a nuclear weapons program. This would be more likely if, at the time, Nehru has been succeeded by a less neutralist government.

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