

F. A. S. NEWSLETTER

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to provide information and to stimulate discussion. Not to be attributed as official FAS policy unless specifically so indicated.

CIVIL DEFENSE NOTES

• On December 30 the Defense Department released a 46-page booklet, "Fallout Protection." The booklet provides information on the effects of the detonation of a 5-megaton bomb on the earth or in the air and spells out measures that the private citizen can take to protect himself from some of the after effects of such an explosion.

• On December 14, the Administration proposed a 700-million-dollar civil defense program emphasizing Federal incentive payments to spur community fallout shelter construction in schools, hospitals and welfare institutions. Deputy Defense Secretary Roswell L. Gilpatric said that Federal grants would be in the neighborhood of \$25 for each shelter space which has been estimated to cost \$40. Figured in terms of 20 million spaces, this would fix the Federal contribution at \$500 million. In order to qualify for incentive payments, the shelter space would have to be in facilities "created by public, or private, non-profit institutions engaged in health, education or welfare activities." Funds would not be available for any community shelters that were racially segregated. The program is not intended to discourage the building of individual shelters. The Government plans to offer an expanded program of technical information and advice about low-cost home shelters. (Wash. Post, 12/15)

On January 1, 1962, Department of Defense officials expressed concern that the newly proposed 700-million-dollar civil defense program would be damaged by Congressional cross-fire. Their concern was prompted by the news that House jurisdiction over civil defense funding had been returned to the Independent Offices Appropriation subcommittee headed by Albert Thomas of Texas. Mr. Thomas has been an effective foe of civil defense spending and in past years has led House moves to cut Administration fund requests by as much as 75%. The Administration had hoped to bypass Thomas by the transfer of civil defense to the Pentagon. Congressional shelter advocates vow that they will take the issue "as high as the Speaker" if necessary to get the civil

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SUPPORTER OF 'U.S. OF EUROPE' LOSES POST AS EURATOM CHIEF

Etienne Hirsch, a foremost advocate of a United States of Europe, has been replaced as head of Euratom because of President de Gaulle's hostility to the idea of supranationality. The French Government decided against backing M. Hirsch, a Frenchman, for another term in office and instead advanced the candidacy of M. Pierre Chatenet, former French Interior Minister in the Government of Premier Michel Debre. M. Chatenet was then named as the new head of Euratom by the foreign ministers of the six nations that make up Euratom and the European Economic and Coal and Steel Communities. The "removal" of M. Hirsch, who was highly respected both in and out of Euratom, stirred widespread protests by European-minded political groups and by the press in Paris and elsewhere. Had his Government supported him, M. Hirsch would have been assured of another term since the post normally falls to France as the most advanced atomic nation in continental Europe. A consistent supporter of even closer European union, M. Hirsch had strongly opposed nationalistic tendencies within Euratom and the other Community bodies, a policy which frequently brought him into conflict with his own Government. General de Gaulle has been described as "lukewarm" about Euratom and Premier Debre as "resolutely hostile" to it. France has been in the minority, if not alone, in opposing programs by Euratom outside the field of basic research as detrimental to her own national atomic progress, including General de Gaulle's plan for an independent French nuclear striking force. (N.Y. Times, 12/22)

DISARMAMENT: RECENT EVENTS

The UN General Assembly's debate of disarmament issues, from the end of October through December, took up perennial agenda items with new intensity. There had been no "general" disarmament negotiations since June 1960 when the Soviet Union walked out of these talks, while 1961 had seen the breakdown of the three-power efforts to complete a test ban treaty, and the renewal of nuclear weapons testing. After lengthy debates, filled with sharp exchanges between East and West, the Assembly produced eight major resolutions and witnessed some progress towards renewal of Great Power negotiations.

Cessation of Nuclear Testing

The Political Committee decided first to discuss two proposals on the question of nuclear weapons testing, rejecting the Soviet Union's new demand that a test ban be linked with general disarmament. (On October 27, the Assembly gave special priority to a third resolution, its unsuccessful appeal to the Soviet Union to refrain from testing a 50-megaton weapon.)

One proposal, initiated by India, urged the States concerned "to refrain from further test explosions pending the conclusion of necessary internationally binding agreements. . . ." The U.S., U.S.S.R., U.K. and France opposed the resolution and declared they would not be bound by it, but it was adopted by a large majority. (N.Y. Times, 10/19 & 11/7) Second was a resolution sponsored by the U.S. and U.K., urging renewal of the Geneva negotiations for a treaty on test cessation. The text set forth principles for a ban on tests "in all environments" under effective control, and called upon all States to accept such a treaty. The resolution gained a large majority, over Soviet opposition. (N.Y. Times, 11/9)

While the Soviet Union soon agreed to resume the three-power Geneva talks, it submitted a new draft treaty whereby these three States and France would renounce all testing, with any control system to be part of a general disarmament agreement. (N.Y. Times, 11/23)

Bars on Use and "Spread" of Weapons

The Political Committee debates and the Assembly ultimately adopted four specific proposals seeking bars on the use or "spread" of nuclear weapons.

A resolution dealing with a prohibition of the use of nuclear weapons was sponsored by ten Afro-Asian States. The Secretary-General was to consult U.N. members and report on the possibilities of an international agreement for this purpose. More controversial were several clauses which embodied a "declaration" of the Assembly's view that use of nuclear weapons would constitute "a direct violation of the United Nations Charter" and "a crime against mankind." The U.S. and U.K. led objections that "the threat of Soviet aggression made it suicidal for states to give a blanket pledge not to use atomic weapons when the United Nations Charter itself recognizes the legitimate right of self-defense."

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FAS COUNCIL MEETING

The schedule of FAS council meetings in New York City is as follows:

Friday, Jan. 26, 1962—1:00 P.M. - 5:00 P.M.

Saturday, Jan. 27, 1962—2:00 P.M. until completion of business. Dinner will be served.

Both meetings will be held in the Cornell Room (Ivy Suite—Ballroom Floor) of the Statler-Hilton Hotel (Headquarters for American Physical Society), located at 33d Street and Seventh Avenue. All FAS members are invited.

A Discussion Paper — THE FAS AND THE "FEASIBILITY OF NUCLEAR WAR"

by Armand Siegel

Presented at the Boston-Cambridge FAS Branch Meeting,
Nov. 8, 1961.

[It is the thesis of this article that the circumstances confronting the Federation of American Scientists have changed fundamentally within the past year or two, due to the emergence of the new doctrine of the *feasibility of nuclear war*. It is argued here that even though it may be reasonable to reject this doctrine, this cannot be done without considerable revision of our policies.]

The Federation of American Scientists was founded in reaction to the early realization by scientists that an all-out nuclear war would bring about the annihilation of civilization, if not of the entire human race. Awareness of the possibility of nuclear annihilation furnished these scientists with basic motivation, and provided an impressive argument for influencing public policy in favor of measures to reduce the danger of such a war. This simple yet strong position, that nuclear war would mean annihilation, has continued to be the FAS nuclear policy; at least no formal change in it has yet occurred. However, the hypothesis underlying it—which may be called the hypothesis of nuclear annihilation—has recently been strikingly challenged and perhaps largely undermined. This has been done most notably by Herman Kahn, in his by now famous book "On Thermonuclear War" (Princeton University Press, 1960).

It is this writer's impression that FAS policy has not yet been adequately adjusted to this new situation. To be sure, several strong resolutions have been passed by the FAS recently, such as those on "No First Use of Nuclear Weapons" and "Disarmament" (February, 1961). But such resolutions can be maximally effective only as part of a completely thought-out policy.

The Survival Hypothesis

The denial of the annihilation hypothesis—which denial I shall call the "survival hypothesis"—forms only the first part of Kahn's doctrine of the "feasibility of nuclear war." The second part consists of the assertion that nuclear war is an *effective* method of implementing national policy; this I shall call the "effectiveness hypothesis." The implications of the feasibility doctrine for the FAS become much clearer if these two constituent hypotheses are considered separately, notwithstanding their close interrelations.

Consider the survival hypothesis. In the first place, is it valid? If not, we are thrown back on the annihilation hypothesis, and the traditional FAS policy is as strong as ever. For this reason it is necessary to subject the survival hypothesis to the most searching possible examination. Political problems are generally so complex that no possibilities of simplification should ever be abandoned unnecessarily. But, unfortunately, it is difficult to disprove *completely* any concept so completely rooted in the social order as the survival hypothesis, without an actual test—which no one wants. However many debatable points it may contain, Kahn's careful analysis, backed by the fact of the remarkable recovery power of industrial societies demonstrated since World War II, has (it is my impression) largely weakened the annihilation hypothesis even if it has not proved its opposite.

This, of course, is partly why people have been so angry at Kahn. But I think the FAS needs to accept this situation, abandon its complete dependence on the annihilation hypothesis, and prepare a second line of defense against the trends leading us into nuclear war. (It is only fair to point out that in many places Kahn himself shows an awareness of the need for some replacement of the restraining effect the annihilation hypothesis used to have.)

If survival is possible, then the way is once more open at least to consider nuclear war as an effective continuation of foreign policy by Clausewitz's "other means". But here is where the feasibility doctrine becomes much weaker, and where FAS policy may restore its grip. For the effectiveness hypothesis is a statement about what nuclear war *can* do, and therefore needs a strong proof (if one is to adopt it); but again, in the absence of actual test, no such proof can be furnished. One may well even hope to undermine the effectiveness hypothesis, just as Kahn undermined the annihilation hypothesis.

However, the "hard-headed realist" may then say, "It may be so, but it is irresponsible sentimentality to hope to abolish war; and as long as there will be war, if we can wage it and survive, we may as well use it to gain our ends—i.e., use it as an instrument of policy."

War as an Instrument of Policy

Before dismissing this argument too quickly, it is best to consider what war accomplishes. As Walter Millis puts it (*Arms and Men*, G. P. Putnam's Sons, also Mentor paperback, 1956; *Permanent Peace*, Center for the Study of Democratic Institutions pamphlet) war in the past has been a socially useful institution. It has been a method of last resource for the settlement of inadjudicable disputes, in the absence of effective allegiance to any supranational authority. It is a method of "power accounting"; it settles accounts, and enables national groups to go on to new tasks. One can see, in the Congo, a present-day situation in which a resort to (civil) war as a method of eliminating chaos and establishing authority might well be claimed by realists to be socially beneficial, at least if outside powers were willing to stay out of such a war.

One may argue endlessly and fruitlessly as to whether war can ever have a beneficial result. This stage of the argument is the most dangerous one for an organization like the FAS. For the question of the necessity of war generates an extreme polarization of opinion which tends to make intelligent analysis impossible. On one side is pacifism, on the other its philosophical opposite, which does not seem to have an accepted name but which might be called antipacifism. Pacifism may be defined as that view which primarily rejects war, and relegates to a subordinate status the problem of providing an effective substitute for its social function. Antipacifism is the view that war is inevitable and that it should be accepted as a social institution.

Now the FAS is necessarily, existentially, committed against the latter view. On the other hand, I think it should not be committed to pacifism. It would seem unwise for a group of scientists-in-politics, seeking the most unchallengeable and persuasive basis for its program, to deny the difficulty of replacing war in its social functions, or to minimize this problem. The question then is, can we reject pacifism *without accepting the temporary inevitability of war?* In view of the present international situation, this is not at all easy to do.

In fact, the accumulation of unbalanced "power accounts" has grown so great in recent years that the danger is, as we all know, that all-out nuclear war may yet break out, annihilatory or not. This danger has brought great pressure for the acceptance of the effectiveness hypothesis, even on haters of war, if they try to be realistic. For does not the feasibility hypothesis offer at least a temporary escape from the danger of annihilation, if we accept it and plan our wars accordingly? Is it not irresponsible and inhumane, then, to reject it?

The theoretical methods of holding war within bounds form the field of *Arms Control*. Arms Control can be advocated for two reasons: As a means of approaching complete disarmament, or as a means of insuring the effectiveness of war as a social institution. Much of the thought of Kahn, of Schelling and Halperin (*Strategy and Arms Control*, Twentieth Century Fund) and other students of Arms Control reflects the latter point of view. And, as outlined in the preceding two paragraphs, there is much implicit (and explicit) pressure for the FAS to adopt it.

The FAS Position

What arguments could the FAS honestly use to reject this effectiveness argument for Arms Control? The strongest and simplest would be the one suggested in an earlier paragraph: to assert, and to back the assertion with studies in the history and technology of war, that nuclear war is not indeed an effective instrument of national policy. This is not as strong and simple a position as the old annihilation hypothesis, but it is in the same spirit. And it has the great advantage that it is very likely true. As Millis says, war as an institution has "hypertrophied"; summarizing, he writes in "Arms and Men" (p. 307):

When, with the introduction of both the giant weapons and the all-powerful state, it [war] grew finally and palpably to a point at which it became totally destructive to economic, biological and moral values alike, while at the same time losing its social function and leaving be-

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BOOK REVIEW: ARMS CONTROL

"The Nation's Safety and Arms Control" by Arthur T. Hadley, Viking Press, 1961

"The Nation's Safety and Arms Control" was written by Arthur T. Hadley at the suggestion of various M.I.T. scientists who organized the 1960 Summer Study Conference on Arms Control. It is non-technical and intended for the layman. Even though Arms Control concerns itself with the control of arms and ultimately disarmament, Mr. Hadley makes it quite clear that he considers complete disarmament a Utopian idea without practical application. Peace, he thinks, is more likely to be maintained through the control and inspection of a necessary amount of defensive weapons, both nuclear and conventional.

Our present situation in the "kilomegaton age" is frightening. The combined stockpiles of the U.S.A. and the U.S.S.R. are estimated to be about 55 kilomegatons and should these all be used in a war then 90% of the population of both countries would be killed. It is small comfort that this much fissionable material only corresponds to one-eighth of D.O.E. (Death of Earth).

The facts about the destructive power of nuclear weapons lead to past, present and future proposals to deal with this threat. The past proposals for Arms Control made by both the United States and Russia have merit in themselves. The dismal failure to reach agreement in these proposals gives the impression that both sides lacked sincerity and cohesion in their respective policies. It is sad to note that the agreement to cease nuclear testing, made in 1958, is regarded in this book as a firm settlement.

The objective of present U.S. policy is deterrence, but it is pointed out that this policy of safety through adequate second strike ability requires "hard" weapons, that is, weapons invulnerable to a surprise attack. American bases are known and therefore vulnerable, and since they have to be ready to react instantaneously they cannot have very many safety features. This increases the possibility of triggering a general war by accident. The exceptions, of course, are the Polaris missile and the Minuteman solid fuel missile, but these are at present ten in number and carry relatively small warheads.

The Russians depend primarily on secrecy for the security of their weapons from nuclear attack and this is said to account in part for their reaction to the spying systems of the U-2 and the Samos. It is felt that the hardening of their missile bases would lead to a relaxation of tension. Any hope for a stable deterrent system seems bleak when it can so easily be upset by a breakthrough. The development by one side of an effective anti-missile missile could alter the whole situation.

What then of the future? Mr. Hadley argues that a realistic approach to Arms Control lies in imposing inspectable limits on weapons. At present no inspection system is foolproof and complete weapon abolition would give an overwhelming advantage to the side that cheated. Whether at the present even this limited objective can be realized, remains to be seen.

—C. Davies

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The FAS, founded in 1946, is a national organization of scientists and engineers concerned with the impact of science on national and world affairs.

DISARMAMENT

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The Committee approved the resolution by a majority of 16 to 16, with the Soviet bloc in favor and many Western States opposed or abstaining. (N.Y. Times, 11/8 & 11/15) Ten African States sponsored a resolution calling on all States to regard the continent of Africa as a denuclearized zone, where nuclear weapons would not be tested, stored, or transported. The Committee approved the resolution as a whole without opposing votes, though with 42 States abstaining. (N.Y. Times, 11/8 & 11/15)

Two resolutions reflected the growing concern to prevent the "spread" of nuclear weapons. The Political Committee approved by acclamation Ireland's proposal calling on all States to seek an agreement with inspection and control, whereby atomic powers would not relinquish control of weapons to States not possessing them, and the latter "would refrain from manufacturing them." Sweden and other neutral States led a broader effort to promote a "non-nuclear club," whereby States not possessing weapons would not manufacture or acquire them or permit other countries to store them on its territory. The resolution asked the Secretary-General to enquire under what conditions States would accept such an agreement and report by April 1. The Soviet Union found the proposal "weak" but acceptable, while the United States and most NATO countries were opposed to provisions which would "prejudice existing defensive arrangements."

The Committee approved the resolution by a vote of 57 to 12, with 32 abstentions. (N.Y. Times, 11/18 and 11/25)

By December, the General Assembly was at last able to register the hope that negotiations seeking a general disarmament agreement would be resumed.

After months of private talks, the United States and Soviet Union had agreed on a joint statement of principles to govern negotiations for general disarmament under effective controls, which they submitted to the Assembly on September 20. Subsequent statements of the two States showed major differences in their interpretation of controls, but the immediate problem was their failure to agree on the membership of a negotiating group to replace the earlier body of five Western States (U.S., U.K., France, Canada, and Italy) and five Soviet bloc States (U.S.S.R., Bulgaria, Czechoslovakia, Poland, and Rumania). Private discussions of the formula continued, and on December 13 the two States produced a complete resolution, in which the General Assembly called for negotiations by a new committee, consisting of the five Western and five Soviet bloc States plus eight "non-aligned" members: Brazil, Burma, Ethiopia, India, Mexico, Nigeria, Sweden, and United Arab Republic. The resolution recommended negotiations based on the "principles" of September 20, and requested a report by June 1, 1962. (N.Y. Times, 12/14)

CIVIL DEFENSE NOTES

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defense appropriation out of Thomas' subcommittee. (N.Y. Times, 1/2)

- Shelter surveys are under way or contracted for in every state except Connecticut. Eighty-five percent of the survey data on potential shelters with space for 50 or more persons in existing buildings is expected to be ready for the computers by March 1. Stocking the shelters with food, water, radiation detection equipment and first aid kits will take until December, 1962.

Preliminary surveys indicate that most Northern cities have ample shelter space.

- The National Civil Defense Warning System will be integrated with the United States military communications network early this year.

- The Federal Trade Commission on December 7 issued a set of fifteen "do's" and "don'ts" for commercial fallout shelter builders to use in advertising their products. Terms such as "fallout-proof shelter" and "CD-approved shelter" are forbidden as are any claims that imply complete protection. Quoted prices must include the cost of all parts of the shelter, installation and delivery charge and advertising must "disclose affirmatively" that a shelter must be properly installed before it can provide protection. If merchants fail to comply with the new FTC ruling, they face Federal prosecution and fines of \$5000 for every day that violations continue. (N.Y. Times, 12/8)

THE FAS AND THE FEASIBILITY OF NUCLEAR WAR

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hind it no substitute capable of discharging that function, the result was the peculiar crisis in which the modern world now stands.

Millis gives his evidence in detail in the book; it would be difficult to paraphrase it here. The reader may try for himself to see if he can represent either of the last two giant wars as having yielded any net gain in stability for the world political order. The years that have passed since the above-quoted passage was written have, if anything, intensified the destructive possibilities, and strengthened Millis' original argument.

The infeasibility of nuclear war, defined as suggested here, may be the simplest position we could hold now, but it is far from the present FAS position in this respect. It is a policy with shadings, instead of blacks and whites. Its explicit acceptance by the FAS will require FAS members to make judgments on history and politics, as well as technology. It is not enough to recognize the biological, moral and social undesirability of war; one must provide a functional alternative to it. In a recent television debate, Herman Kahn pointed out that when Russian and American scientists meet, the Russians are usually better prepared politically, the Americans technically. Very likely the cause of understanding would be greatly advanced if each side strengthened its weak point. The argument presented here implies that this political weakness of American scientists is also a source of weakness in FAS policy.

(Editor's Note: Dr. Donald G. Brennan will comment on this article in another issue of the Newsletter.)

AEC MAY SEEK PRIVATE ATOM FUEL OWNERSHIP

The Atomic Energy Commission is expected to ask Congress to change the Atomic Energy Act to make possible private ownership of special nuclear fuels. The Commissioners will probably meet soon with members of the Joint Committee on Atomic Energy to explore the feasibility of such a move, which could have far-reaching effects on the fledgling U.S. atomic power industry. In effect, such a change would eventually bring to an end the Government's monopoly on enriched uranium and plutonium; a change in the law now would open the door for an orderly transition from the present situation, according to AEC Chairman Seaborg. At present, the Government owns and leases fuel for reactors, credits the operation for unused and degraded fuel at input value, and is obligated to purchase all reactor-produced plutonium and uranium at a figure based on its fair price for its intended use. If the legislation were changed, reactor fuel and reactor products would eventually take their place, Seaborg noted, as "normal items of commerce in a free and competitive market". The Government would probably still be the only producer of such fuels for many years to come, be-

SPACE AGREEMENT IN U.N.

On Dec. 11, 1961, the U.N. General Assembly's Political Committee unanimously approved a resolution calling for the internationalization of space and world cooperation in the use of satellites for weather research and communications.

A significant fact was the Soviet Union's support of the move. The Soviet delegation previously had boycotted the meetings of the U.N. Committee on Peaceful Uses of Outer Space and effectively blocked any of its work. They now have joined with the twenty-four members of the space committee in sponsoring the resolution.

The approved resolution, summarized, (N.Y. Times, 12/11, 12/17) calls for the principles of international law, including the United Nations Charter, to apply to outer space and to celestial bodies and states that they are "not subject to national appropriation."

It "calls upon states launching objects into orbit or beyond" to furnish information on them and requests that the Secretary General "maintain a public registry" of this information.

It also recommends all member states to work with the World Meteorological Organization and International Telecommunications Union.

The reason for the Soviet reversal is not yet determined. Their past refusal to sanction the Committee on Peaceful Uses of Outer Space was based on the rejection of the Soviet demand that decisions be made on the basis of "agreement" rather than majority rule. This was interpreted by western nations as a demand for veto power. U.N. rules of procedure provide that decisions be made by majority vote (i.e., that the rules for the General Assembly shall apply also to "subsidiary organs" established by the Assembly). The resolution apparently was presented originally by the U.S., Canada, Australia and Italy but, as described by Charles W. Yost of the U.S. delegation, in the week prior to the formal presentation and debate, the U.S. delegation "held numerous consultations with the Soviet and other delegations" and agreement was reached with only minor changes.

The resolution was adopted unanimously but it remains to be seen what kind of a cooperative program can be organized.

cause no one could afford to compete with it, but users would buy and own special nuclear materials—something now prohibited by law. Proponents of the change claim it would, among other things, eventually stop "concealed" Government subsidies to the atomic power and utility industries, create incentives for private industry to find new uses for plutonium, and limit the Government's investment, which is expected to reach an overall total of \$1 billion in the early 1970s. One criticism of the proposed change in the law is that the Government would lose control of these materials, which could be diverted surreptitiously to weapons production. The AEC contends, however, that through its licensing process it would still adequately police and control the fuels it would sell rather than lease. Just where Congress would stand on the proposed change is not predictable now. (Wash. Post, 12/28).

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