

F. A. S. NEWSLETTER

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SPACE PROGRESS INSPIRES CONTROL PROPOSALS

SPACE CONTROL URGED AS STEP TOWARDS PEACE

In a letter to Premier Bulganin on Jan. 12, President Eisenhower proposed that the US and USSR "agree that outer space should be used only for peaceful purposes. We face a decisive moment in history in relation to this matter. Both the Soviet Union and the US are now using outer space for the testing of missiles designed for military purposes. The time to stop is now."

The President's letter also indicated US readiness to participate in another top-level conference, if preceded by "preparatory work" essential to fruitful discussions. (Bulganin had renewed proposals for a summit conference in a letter to 19 nations on Jan. 9.) Eisenhower's letter further proposed stopping "the testing of nuclear weapons ... indefinitely," "controlled and progressive reduction of conventional weapons and military manpower," and taking "measures to guarantee against the possibility of surprise attack."

USSR PARTIALLY REJECTS PLAN Premier Bulganin replied to the President on Feb. 2 that, "if the Western powers are willing to reach agreement to ban atomic and hydrogen weapons, to ban the tests thereof and to liquidate foreign military bases in other nation's territories, ... an agreement on the control of outer space for peaceful purposes only would unquestionably meet no difficulties." Among several topics for discussion at the proposed summit meeting, Bulganin mentioned (1) immediate discontinuation of A- and H-weapons tests, (2) renunciation by the USSR, US, and Britain of the use of nuclear weapons, and (3) establishment in Central Europe of a zone free of atomic weapons.

The USSR has supported a Polish proposal for such an "atom free zone" composed of West and East Germany, Poland and Czechoslovakia; it has also proposed atom free zones be established throughout Scandinavia and Finland, as well as an atom-and-missile free "zone of peace" in the Middle East. The US has twice rejected the Polish plan (Feb. 7, 18) on the basis it would depend merely on good faith and be unenforceable.

Prospects for a summit conference dimmed as the White House issued a statement (Feb. 3) suggesting that "further clarification of the Soviet position will be necessary before it can be ascertained that such a meeting would 'hold good hope of advancing the cause of peace.'" Eisenhower's latest letter to Bulganin (Feb. 15) said that "the impasse to which we have come," regarding topics for a summit meeting agenda, might be "broken by less formal and less publicized contacts ..." Eisenhower stressed again the "terrible new menace ... to be found in the use of outer space for war purposes," and the need for control.

UN CONTROL? Secretary General Hammarskjold, on Feb. 7, supported the Western plan for separate talks on control of outer space, advised against a summit conference at the present time, and urged the West to break up its disarmament package and negotiate on a piecemeal basis "to get somewhere" with Russia. The UN, he said, "should be instrumental" in seeking agreements on space control, and he revealed that it has undertaken a study of the legal side of this "special" problem. On the UN Radio Jan. 31, UN General Assembly President Munro (New Zealand) suggested a UN conference of scientists and diplomats to study control of outer space; he observed there has

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U.S. ADMINISTRATION of SPACE R & D

In the US, the complex problem of how space research and development should be administered has been under active consideration. Much attention has centered on the significance of civilian-vs.-military control of space R & D, and the parallel with atomic energy control decisions in 1945-6. The President has ordered his scientific adviser, James W. Killian, Jr., to make a special study of the type of structure needed for US space activities. The Defense Dept., on Feb. 7, set up the Advanced Research Projects Agency, under Gen. Electric Co. vice president Roy W. Johnson, to devise outer space weapons and other space vehicles.

CONGRESS TO STUDY The Senate on Feb. 5, created a special Committee, headed by Sen. Johnson (D, Tex.); "to conduct a thorough and complete study" of "all aspects" of the "exploration of outer space." The House has before it proposals to set up a similar special committee, and to form a Joint Committee on Outer Space. All legislative proposals regarding outer space are to be referred to the new Senate Committee, which must make recommendations to Congress by June 1, or at the latest by Jan. 31, 1959. The Joint Atomic Energy Committee created a new Subcommittee, headed by Sen. Anderson (D, N.M.), on Outer Space Propulsion. It has already begun hearings, and will probably concentrate on nuclear propulsion for space vehicles.

A number of proposals regarding administration of space R & D, which have already been advanced, will doubtless be considered by the Johnson Committee. An interim report released Jan. 23 by the Senate Preparedness Subcommittee, which held hearings on outer space after the launching of Sputnik, made 17 recommendations to improve the US defense and missile set-up, including: (#10) "Provide for a freer exchange of scientific and technical information between the nations of the free world;" and (#15) "Accelerate and expand R & D programs, provide funding on a long-term basis, and improve control and administration within the Dept. of Defense or through the establishment of an independent agency."

NEW AGENCY? Strong arguments for an independent civilian space commission modelled after the AEC, and for a "Dept. of Science with full Cabinet status," were set forth in a report by members of the Los Alamos FAS Chapter. The group was asked to study the problem by Sen. Anderson (D, N.M.), who read their report on the Senate floor Jan. 16 (see Congressional Record, pp. 544-554). The proposed Space Commission would have 5 to 7 members; "at least 3 to 4 of these should be scientists, the chairmanship being held by a scientist well experienced in scientific administration," and there should be one representative each from industry and the military.

Anderson later (Jan. 23) introduced a compromise bill (S. 3117) to place space R & D under the AEC, authorize a new national space research laboratory, and urge establishment of an international space research lab. Anderson argued that there are "inherent difficulties" in keeping the program within the Defense Dept.; and that creation of a new agency might cost 2 years to set up. It therefore seemed most practical to him to place the program under the AEC, because "it is a going agency and has

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TEST BAN -- Pro and Con

The proposal for international agreement to ban nuclear weapons tests has recently been the subject of active debate. The FAS Council, meeting in New York on Feb. 1, voted to renew its support for such an agreement, and simultaneously urged action on two other proposals which could represent significant steps toward world peace. The complete statement authorized

FAS POLICY ON DISARMAMENT

The following statement, authorized by the FAS Council meeting in New York Feb. 1, was released on Feb. 8:

The recent failures of disarmament negotiations stand in sharp and sobering contrast to the recent evidences of success in space weapons technology. Hope for weapons control and disarmament, in a sense 'negative' approaches, seems dim as long as political tensions and distrust characterize international relations. On the other hand, the chances that 'positive approaches' such as political settlements and international cooperation can be reached seem slight, as long as the great powers retain the capacity for practically instantaneous mutual destruction.

The Council of the Federation of American Scientists favors immediate action on the following proposals, which combine the 'negative' and 'positive' approaches to world peace -- prohibition of arms, and promotion of international cooperation and understanding.

1. The FAS Council urges international agreement to prohibit further testing of nuclear weapons. Both the US and the Soviet Union have accepted in principle the desirability of such a test ban. First, it would present the entry into the nuclear arms race of still more nations, an eventuality that would multiply many-fold the difficulties of disarmament negotiations and would also multiply the chances of nuclear war precipitated by a strategic or tactical miscalculation. Second, it would allay the fears aroused by the potential hazards of radioactive fallout. The extent of these hazards has been, at least by implication, unduly exaggerated by some and unduly minimized by others. Still, that there are some lethal effects is denied by no one. Those who continue testing must therefore be prepared to publish good and sufficient cause or desist in the name of humanity. Finally there is good reason to hope that the success of negotiations in this matter, particularly as it would entail the establishment of the first mutual inspection system, might go far toward establishing a more favorable atmosphere for subsequent negotiation of the many political and military problems requiring resolution.

The FAS has previously advocated an initial test ban agreement limited to weapons of such a size that testing could be detected by monitoring sites outside the territorial limits of the nuclear powers. In view of the increasingly positive attitude of the major powers toward at least limited mutual inspection, it now seems practicable to proceed directly to a test ban including even the smaller nuclear weapons. Techniques currently available would permit detection of violations with only a small number of appropriately situated monitoring stations. These monitoring stations would have to be distributed throughout the world, including the territory of all nuclear powers. However, they need not be located at militarily strategic sites and should therefore be acceptable to all powers. We propose that a duly constituted UN agency be given the responsibility for supervising the necessary monitoring operations. Should it appear that useful scientific information can be obtained from the study of nuclear explosions, these could be carried out under UN auspices and the results made available to all nations.

2. The rapidity with which research on long-range missiles is progressing offers us exciting new vistas of knowledge and at the same time brings us terribly close to the 'date of no return.' Within a very short time, possibly measured in months, the techniques for delivery of intercontinental missiles armed with nuclear warheads will have been perfected. Just as it is now already too late to detect hidden stores of nuclear weapons

by the Council was released on Feb. 8 (see text, below).

DISARMAMENT STEP? Sen. H. H. Humphrey (D, Minn.), chairman of the Senate's Disarmament Subcommittee, made a 4-hour Senate speech on Feb. 4, in which he singled out suspension of nuclear weapons tests as a practical first step in piece-by-piece disarmament negotiations with the USSR. He characterized as "utopian" the present attempt to

by any practicable inspection system, it may be impossible then to devise any means for obtaining a satisfactory inventory of such ultimate weapons. We shall be committed to living indefinitely in the shadow of fear. It may not yet be too late to avert such a precarious balance of terror.

Assuming that neither the US or the USSR has yet perfected its missiles to the truly operational level and assuming, as seems most likely, that neither side has as yet any arsenal of these weapons, control is still feasible. Until a nation is reasonably certain of the degree of reliability of its missiles, it will not wish to risk all on a surprise attack based on the use of that weapon. While it would be a very costly project, it would be technically possible to set up a monitoring system that could detect missile launching sites and test firings. It would require, of course, extensive and detailed inspection on the ground and in the air. Again the UN could be given the authority for the monitoring operation.

Here, in the challenging frontier of space exploration, the possibilities for international organization are many and the need is great. President Eisenhower, in his recent letter to Premier Bulganin, and Senate Majority Leader Johnson, in his speech of Jan. 14, have endorsed the principle of placing all future research in this area on an international basis to insure that results will be used only for peaceful purposes.

The success of the International Geophysical Year has given us a precedent. It should be possible to incorporate a mechanism, similar to that set up under the IGY, as a permanent part of the UN structure. All studies of long-range missiles, satellites and space platforms would be open, and the results would be the common property of all mankind.

3. Parallel with measures designed to control the arms race, steps would be taken to increase the authority and power of the UN. Because of the unavoidable and unpredictable progress in weapons technology, it seems unlikely that a long-range solution to the disarmament problem will be found in the discovery of foolproof systems of inspection. Therefore the establishment of a permanent UN Police Force could become an increasingly important, safe and effective deterrent to aggression and a basis for limiting the present precarious arms race. This force should preferably be recruited directly by the UN, placed in UN uniform and trained in inspection, patrol and maintenance of order. It could patrol borders threatening violence and it could inspect such arms control measures as can be agreed upon. The US Senate has unanimously passed a resolution calling for US leadership in the UN for such action. The UN General Assembly could act by a two-thirds majority vote, free of Security Council veto. Even should some of the major powers fail to support such a UN Police Force financially, the use of some American defense funds in such a force would in the long run represent a sound investment in our security. We therefore urge prompt US action in the UN toward this end as another important step that can decrease the chances of a nuclear war.

We feel that each of the measures discussed here could represent a significant step along the road to world peace. Any single proposal or approach must of necessity focus on a limited and specific objective. Often there is a tendency, out of pessimism or skepticism, to reject such limited proposals as legitimate goals in favor of attempts to achieve broader, many-faceted agreements. Measures like those proposed here, while they are only first steps toward more comprehensive plans for peace, could relieve some of the immediate fears and tensions and provide much-needed additional areas of international cooperation and agreement.

reach comprehensive agreement with the Soviet Union on all of the Administration's 9-point disarmament proposals in a single "package" and suggested that we should be prepared to negotiate separately on each of the nine points. He argued that a separate agreement for a nuclear test ban, which included admission to the USSR by an international agency for an adequate inspection and detection system, would be "a political and technological breakthrough second to none." (Reprints of Humphrey's speech are available at 15 cents from the Friends Comm. on National Legislation, 104 C St., N. E., Washington 2, D. C.)

"AGE OF DETERRENCE"

Editor Eugene Rabinowitch, in the January issue of the Bulletin of the Atomic Scientists, said that an agreed cessation of nuclear tests remains a "technically feasible" step toward controlled disarmament, but he was pessimistic as to what it might accomplish unless the overall approach of the major powers to the disarmament problem changes radically. He saw the world entering its third year in "the age of deterrence," and he made constructive proposals for living with the arms race "with a minimum of saber rattling."

He pointed out that with the recent progress in perfecting long-range nuclear missiles, the "logical next stage in the arms race is an attempt to develop weapons capable of intercepting" them. "Nuclear weapons with minimum fallout," he wrote, "seem to be the only glimmer of hope in this field, and he found "no convincing reason to oppose tests needed to develop" such defensive weapons. He urged however, that testing be restricted to the minimum necessary for this purpose, "and that tests with high fission yield be avoided?"

"CLEAN" BOMBS & FALLOUT HAZARD

Linus Pauling, on Jan. 13, personally presented to Secretary General Hammarskjöld a petition, to the UN, urging international agreement to ban nuclear weapons tests. The petition, published in full in Newsletter 56-5, was first released last June with signatures of some 2000 US scientists. As presented last month, it had been signed by 9235 scientists from 44 countries, both Western and Communist. Spokesmen for major UN delegations indicated they planned no immediate action on the proposal.

In an article entitled "The Compelling Need for Nuclear Tests" (Life, Feb. 10), Edward Teller and Albert Latter (the latter a physicist with the Rand Corporation) argue that continued tests are necessary on the ground that our testing program is aimed, not at developing more horrible weapons, but at perfecting small weapons -- "suitable for limited wars" and causing "the least possible contamination." While they express "the hope that every nation testing nuclear explosives will employ similar safeguards, "the authors are skeptical that Russia would abide by a test ban agreement, or that carefully hidden tests, in violation of the ban, could be detected by monitoring equipment.

Pauling subsequently criticized Life for not finding room for the 247 word petition with the 5000-word Teller-Latter article, -- especially since the Life article inaccurately paraphrased the petition and then called it misleading. Pauling expressed "shock" at the scientists' "unethical" technique of attributing an untrue statement to the opponent and proceeding to devastate it. The authors state that nuclear testing does "not seriously endanger" present or future generations, but concede that "fallout is a problem of concern to all the world's inhabitants." Pauling's reply, published Feb. 24 in I. F. Stone's Weekly (5618 Nebraska Ave., Washington 15), explained how nuclear tests "do damage to the health of human beings and the pool of human germ plasm," and discussed the genetic and somatic hazards from weapons tests in detail.

"CONTAMINATION WITHOUT REPRESENTATION"

In a sermon at All Souls' Unitarian Church in Washington on Feb. 9 (from the pulpit of the late A. Powell Davies), Editor Norman Cousins -- whose Saturday Review (May 18, '56) published in full Albert Schweitzer's appeal of Apr. 23 for an end to nuclear tests -- said we have developed a "casual approach to violence" in this age of nuclear testing. Emphasizing that a nation's testing program increases the level of radioactivity not only in its own territory but throughout the world, Cousins asserted: "There should be no contamination without representation."

Disarmament Debate

Harold E. Stassen, whose resignation as the President's disarmament adviser was announced Feb. 15th, subsequently proposed a 6-power summit conference moderated by the UN Secretary General, to include Poland and Czechoslovakia in addition to the US, Britain, France and Russia. The 3-3 division would contrast with the present 4-1 division in the UN Disarmament Subcommittee (US, Britain, France and Canada vs. Russia).

The Washington Post (Feb. 20) reported on an "extraordinary" speech in Minneapolis Feb. 18 by Stassen's long-time right-hand man, Robert E. Matteson, director of the White House Disarmament Staff. Without mentioning names, Matteson highlighted the apparent split within the Administration between the "relaxation of pressure" approach (presumably Stassen's) and the "increased pressure" approach (presumably Dulles'). He said "there exists in the policy formulation process . . . a day-to-day competition between the major emphasis of these two different concepts."

The relaxation of pressure policy, according to Matteson, "would advocate the maintenance of relatively great military and economic strength, but, at the same time, would pursue a course of gradually relaxing tensions, of increased contacts with the Communists, of increased trade, of gradual and reciprocal safeguarded arms limitation and control and of the willingness to carry out negotiations with the Communists based on a true mutuality of interest."

The alternative approach toward Russia and her allies, Matteson explained, "would be one of bottling up Communists and communism within its present Iron Curtain area . . ." "Such a policy would put heavy emphasis on increasing the strength of the military alliances -- such as NATO, Baghdad, SEATO -- and on placing nuclear units around the border of the Soviet bloc. It would restrict to a minimum contacts of American and free-world people with Soviet Communists. It would put a heavy secrecy label on information to scientists and the American people in general. It would frown on serious negotiations with the Communists." Increased pressure on the Soviets, he said, in hopes of forcing a surrender "may more likely result in violent Soviet reactions, which would make war itself more likely."

The SENATE DISARMAMENT SUBCOMMITTEE, by Senate vote Jan. 29, was granted an extension to July 31, '58, with the stipulation that its functions will then be assumed by the parent Committee on Foreign Relations. Subcommittee hearings will soon be resumed. * * * An international "CITIZENS' COMMITTEE," appointed by the UN, was proposed by Adlai Stevenson on Jan. 31, to gather various peace proposals and "provide a businesslike basis for serious negotiations among the nuclear powers." * * * AEChairman Strauss said Feb. 3 that an international CONFERENCE OF HUMANISTS may be held in '58, to discuss how to put man's scientific advances to work for his good.

The FAS is a national organization of scientists and engineers concerned with the impact of science on national and world affairs. This issue of the Newsletter was prepared by D. A. Osgood and I. Shapiro of the Washington Office Staff, together with two Washington area members:
D. S. Frederickson and H. C. Goodman

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STATE REVIVES SCIENCE OFFICE

The appointment of Wallace R. Brode, associate director of the Bureau of Standards and president of the AAAS, as the new Science Adviser to the Dept. of State was announced on Jan. 13. Since J. B. Koepfli's resignation from this post in 1953, the Department had refused to replace him, and had not placed any new science attaches abroad since the last appointee came home in early '56. Lloyd V. Berkner, whose report ("Science and Foreign Relations," 1950) to Secretary Acheson laid the foundation for this program, pointed again to its potential value in the January issue of Foreign Affairs. There were "more than 500 military attaches assigned to our foreign missions" in 1957, he observed, "and not one scientific attache."

FAS, which for years has pressed for revitalization of this program, wrote Secretary Dulles in October, '56 that scientists of "recognized reputation" should fill the attache posts to "improve our relations with other nations." The science attache program was initiated in 1951 and, at its peak, 10 scientists were assigned to US embassies abroad. \$200,000 is now being asked of Congress to reactivate the program, the AP reports (Jan. 14); according to officials, science attaches will quickly be sent to England, France, West Germany, Sweden and Japan but not to Russia.

The FAS Passport Committee launched a fund appeal last month to assist in bringing the passport case of cosmic-ray physicist W. Bruce Dayton to the Supreme Court. Contributions already coming in will help to finance printing, court and legal expenses. Dayton's own brief, and an amicus curiae brief on behalf of FAS and the American Jewish Congress, have already been filed. The case is expected to be heard the week of Mar. 21. Contributions may be sent to: FAS Passport Fund, P. O. Box 6, Berkeley 1, Cal. Additional copies of the appeal, describing the history of the case and the basic issues of due process raised by it, may also be obtained from this address.

US ADMINISTRATION of SPACE R & D (Cont. from page 1).
the best laboratory complex in the Nation, perhaps in the world."

The FAS Council, at its Feb. 1 meeting, endorsed "the principle embodied" in Anderson's bill -- to achieve the civilian "development and control of outer space for peaceful purposes by the US and all friendly nations working cooperatively..." The Council urged Congress and the Administration to give "the most serious consideration" to "placing further US R & D in the field of outer space under civilian control." "This first step of placing our own program in a non-military framework would improve the prospects for eventually internationalizing all research in this field, and help to guarantee that the efforts of many nations in crossing the new frontier of space exploration are limited to peaceful uses," the Council said.

Defense Secretary McElroy told reporters he favored a proposal released Jan. 27 by the civilian National Advisory Committee for Aeronautics -- that it take over leadership of space

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Time Value: Dated Material

R & D in cooperation with existing military and civilian scientific agencies. NACA Director Dryden said the Nat. Science Foundation and Nat. Academy would plan scientific experiments; NACA would "conduct flights for scientific purposes within its capabilities or jointly" and expand its laboratories. NACA would work with the Defense Dept.'s Advanced Research Projects Agency and eliminate the need for a new agency or Dept.

The President emphasized in his Feb. 5 press conference that, pending the report of Killian's study, "the defense space business" will remain under Defense Secretary McElroy. Sen. Johnson said the new Pentagon space agency was "a temporary expedient" and does not "settle the basic policy question." "I have no hard and firm conclusions as to the policy that should be adopted," he said on Feb. 6, "but I do know there is an urgent need to lodge specific responsibility somewhere -- and that the decision should not be postponed."

SPACE CONTROL URGED (Cont. from page 1).

been no initiative "except in embryo" to bring the issue to the UN. Majority Leader Lyndon Johnson (D, Tex.), in a Senate speech Jan. 14, advocated international scientific cooperation and urged the US to invite all UN member nations "to join in this adventure into outer space together." On Feb. 3, he called on the President to press immediately for exploration of outer space by UN member nations in a "joint" undertaking. Sen. Mansfield (D, Mont.) asked (Feb. 10) that all nations join in the "cooperative exploration" of outer space.

Referring to our own entry into space, with the successful launching of the "Explorer" on Jan. 31, the Washington Post editorialized (Feb. 5) that the US "could well take the lead" in calling for a special meeting of the General Assembly "to set the stage for a joint undertaking and control arrangements under ... the UN." The Post noted Russia's apparent reluctance to cooperate in such a UN program, but pointed to "a parallel experience with the International Atomic Energy Agency" -- in which the USSR has now joined despite its initial unenthusiastic reaction.

SATELLITE SURVEILLANCE?

Lt. Gen. Gavin, retiring Army research chief, proposed to a House Govt. Operations Subcommittee on Feb. 4 the establishment of a "worldwide reconnaissance network" of satellites, under UN auspices, to provide a sort of "open skies" inspection system that could "guarantee lasting peace."

Administration thinking on how to carry out the President's proposal for peaceful development of outer space was reported by E. W. Kenworthy (N. Y. Times, Jan. 19). US officials reportedly envision a UN commission which might be "primarily a policing agency, concerned with control and inspection," and have the parallel function of policing a "disarmament agreement, when and if there is an agreement;" or it might "supervise, not merely inspect, all outer space projects." Kenworthy cited "the conception that underlay the Acheson-Lilienthal proposals in 1946 for internationalizing atomic energy" as the starting point for this idea.

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