

# F. A. S. NEWSLETTER

Published by the  
FEDERATION OF AMERICAN SCIENTISTS  
1700 K Street, N. W., Washington 6, D. C.  
David R. Inglis, Chairman

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

No. 60-3

April 29, 1960

## TEXT OF TEST BAN TREATY REVEALED

(The following article is a condensation of a story written by Murrey Marder, staff reporter for the Washington Post and Times Herald. Mr. Marder's story appeared on April 20, and is reprinted here with the permission of The Washington Post & Times Herald).

A tantalizing framework for an East-West nuclear test ban was unveiled yesterday in texts of articles of agreement representing 17 months of Geneva talks.

These sections of a treaty-to-be, which could spring to life as a result of a decision at next month's summit conference, previously have been disclosed only in summary form. They were made public, by agreement, with transcripts of the United States-British-Soviet negotiating record from October 31, 1958, through Feb. 29, 1960.

### Prospects Seen Better

Prospects for an agreement have improved since January, said [U.S. delegate] Wadsworth. The atmosphere was particularly benefited he said, by the agreement that President Eisenhower and British Prime Minister Harold Macmillan reached at Camp David last month. Under it, both nations proposed a voluntary short-term ban on underground tests of smaller nuclear weapons, if controlled inspection is agreed for all other tests.

This proposal, coupled with a Western call for East-West research in perfecting the detection of underground nuclear explosions, to which the Soviets appeared receptive, quickened hopes for an eventual treaty agreement. But no one familiar with the task can minimize the unfinished portion of the task.

A preamble for a treaty, 17 articles and an annex have been agreed on. Remaining to be threshed out are about four or five more articles, and two more annexes. These, however, contain the treaty's heart.

When the nuclear test conference resumes in Geneva April 25, Wadsworth, Tsarapkin and British delegate Sir Michael Wright will face these outstanding areas of disagreement:

If agreement is reached, an Annex No. 1—perhaps as long as all the sections previously agreed upon—will spell out details for a network of perhaps 180 fixed global control posts to check on possible tests, methods of detecting tests, and procedures for inspection.

This annex will also deal with the critical issue of operating spot checks, or "on-site inspections" away from fixed control posts, of suspected clandestine tests. The principle of on-site inspection would probably be in a treaty article, probably open to revision on the number of allowable inspections.

The starting number of such inspections is the biggest impasse in the negotiations—which it is hoped can be solved at next month's summit conference. The Soviet Union insists that the number of inspections must be small—and that this is a political decision. The United States and Britain say the number agreed upon—the United States has suggested 20 a year on each side—must be related to the number of possible incidents a year that could be earthquakes or secret tests.

The transcripts just published end on this impasse with Wadsworth unsuccessfully pressing Tsarapkin to say "what is his idea of a satisfactory quota" of on-site inspections; "Is it 1, 10, 50 or 100?" The Soviet delegate's equally interminable retort was that this is a political decision for government chiefs; to keep pushing for a relationship "between the number of inspections and the number of unidentified events" leads "into a blind alley from which there is no way out . . ."

## DONALD J. HUGHES

We report with regret the untimely death on 12 April of Dr. Donald J. Hughes, 45, in Brookhaven National Laboratory Hospital. In 1955 and 1956, Dr. Hughes was president of F.A.S.

In 1940, Dr. Hughes received his doctorate from the University of Chicago. In 1941, he was a member of a cosmic ray expedition in the Andes Mountains. In 1943, he left the Naval Ordnance Laboratory to join the atomic bomb project at the University of Chicago. At the end of the war he became director of the nuclear physics division of the Argonne National Laboratory, where he developed a method of measuring neutron interactions. In 1949, he joined Brookhaven, where he organized the collection and publication of all available information on neutron interactions with matter.

Dr. Hughes was Fulbright Professor at Oxford University in 1953-4. He made many trips abroad and established relationships with Soviet scientists in his field of research.

Dr. Hughes signed the Dr. James Franck report, which had sought to prevent the use of the first atomic bomb. His fellow men will long remember and admire his efforts to acquaint the world with the scientific and social consequences of the discovery of nuclear energy.

## PRE-SUMMIT MEETING ACTIVITIES

On May 14, in Paris, a Summit meeting of Premier Khrushchev, Prime Minister MacMillan, President DeGaulle and President Eisenhower will take place. Although not yet scheduled, it is tacitly assumed (NYT 4/3) that similar meetings in Moscow, London and Washington will follow at relatively short intervals. A return to "personal" diplomacy is in full swing. MacMillan visited Khrushchev and DeGaulle, Eisenhower visited DeGaulle and MacMillan, and Khrushchev and Adenauer visited Eisenhower of the United States. The latest pre-Summit circuit swing is the current trip of DeGaulle to London, Ottawa and Washington.

**No fixed agenda:** In a recent appearance before the Senate Foreign Relations Committee Secretary of State Herter testified that the Summit meeting was a "gamble" (later he changed this to "uncertain" (NYT 3/26) and conceded that he was not optimistic that it would help in settling of East-West problems. In response to Senator Gore, Herter stated that there was no formal agenda for the Summit meeting and that he didn't expect the worlds problems to be settled by a few days of talks. Gore appeared deeply disturbed that the United States was going to the conference "without purpose, without plan, without hope of success."

**Items to be discussed:** The situation is not quite so uncertain, however. It is apparent that there are three major topics to be discussed, 1) a nuclear weapons test ban, 2) disarmament, and 3) Berlin. In addition, Great Britain has prepared, under the close supervision of Foreign Secretary Lloyd, a code of rules for East-West co-existence. This has been circulated to France and the United States (NYT 3/21) and, if approved, will be submitted to Khrushchev at the Summit meeting. Britain rejects the Soviet definition of "peaceful co-existence." Pre-Summit meetings of Western Foreign Ministers are scheduled to occur in Washington, Istanbul and Paris.

**Positions on major problems:** The recent concessions of the Soviet Union in negotiating for a nuclear test ban

(Continued on Page 4)

## REPEAL OF CONNALLY AMENDMENT POSTPONED

On March 29, the Senate Foreign Relations Committee voted 9 to 8 to postpone action on S. Res. 94. SR 94 would eliminate the existing U.S. prerogative to determine unilaterally which of its international disputes falls within the jurisdiction of the International Court of Justice. (See FAS Newsletter, March 18.)

The jurisdiction of the Court is limited to disputes concerning interpretations of treaties and points of international law. While the U.S. agreed in 1946 to compulsory jurisdiction by the Court in such disputes, it added the reservation (Connally amendment) that it would determine unilaterally whether a dispute was a domestic matter and therefore not within the Court's jurisdiction. The U.S. can thus prevent the Court's proceedings by declaring a dispute domestic, without having to argue its position. This is "inconsistent with the deeply rooted notion that no one should be a judge of his own cause" (Sec. Herter, Committee Testimony); and since other governments on the basis of reciprocity are entitled to invoke the self-judging reservation, the result has been that no nation can sue another without mutual consent. In fact, only 11 cases have been brought before the court in the 13 years of its existence.

The move to repeal this self-judging reservation has broad bipartisan support, but has been opposed by a minority who fears that an effective Court might interfere in domestic matters such as race relations, tariffs, and immigration restrictions. Although a majority of the Foreign Relations Committee is alleged to favor repeal, postponement was voted because this was thought not to be the time to introduce another controversial measure onto a Senate floor engaged in the civil rights debate. The question is whether S. Res. 94 will be reported out later this session. Since the Committee may be influenced by public opinion, the recent FAS proposal that members write in support of this bill now appears extremely timely.

## RECENT DEVELOPMENTS IN OUTER SPACE

The prestige of the United States space program has received a much needed boost by recent successful space vehicle launchings. The placing of Pioneer V in a solar orbit early in March marked the first successful launching by the space agency since Explorer VII was placed in orbit last October.

A 94.8-pound sphere, twenty six inches in diameter, Pioneer V is one of the most elaborately instrumented space vehicles ever launched. Its 150-watt transmitter with an expected range of 50 million miles will demonstrate the feasibility of long-distance space communication and will relay information about radiation, charged particle clouds, magnetic fields and micrometeors in space. (NYT 3/13)

Tiros I, the experimental meteorological satellite launched April 1, may be the forerunner of a revolutionary system of weather forecasting. Although Tiros I is not directly related to the use of space for military purposes, its performance illustrates once more the urgency of establishing international control over all operations in space (W. Post 4/4).

The Saturn rocket engine—this country's big hope for sending men into space—underwent a successful ground test at Huntsville, Alabama (3/30 W. Post). New money being applied to the program has moved the operational date from early 1965 to early 1964.

The "grapefruit" satellite Vanguard I, still beeping away after two years in space, recently provided scientists with another surprise. Slight variations from its predicted orbit have been attributed by N.A.S.A. scientists to streams of photons from the sun which they calculated were sufficiently strong to blow the satellite off course by approximately one mile a year. (NYT 3/18)

### Space Program Defended, Attacked

N.A.S.A. Director T. Keith Glennan, in a report to Congress, said the United States space program is firmly based and will continue to "progress and gain momentum." He asserted that the Russians are ahead only in the power of their space vehicles and that they will not maintain that superiority long "if we continue to build up our capability." (W. Post 3/15)

However deep dissatisfaction with the way the nation's space program is being run was expressed by William M.

Holiday, head of a coordinating committee between the Defense Department and N.A.S.A. Saying that his tenure as chairman had been "most discouraging" he urged that all space research and development be placed under one agency, preferably N.A.S.A. He said the present set-up is an invitation to a four-way fight for funds, facilities and brain-power among the military services and N.A.S.A. (NYT 3/12)

In a report relating to the space program, a committee of the National Academy of Sciences-National Research Council declared that the lag in the development of new metals, ceramics, and plastics is holding up the development of nuclear propulsion systems and space vehicles. In its recommendations for breaking through the "materials barrier" the committee urged "significant strengthening at every level of activity" (NAS-NRC News Release 3/23).

### No Progress in UN

Less impressive than the progress in the scientific exploration of outer space is the progress of the nations of the world in trying to control it. Hopes of holding a United Nations scientific conference on the exchange of information about outer space this year have virtually disappeared as a result of an East-West difference on arrangements for the conference (W. Post 3/25). The Soviet Union originally proposed the conference last year and has demanded that a Soviet member be made chairman of the arrangements committee and secretary-general of the conference. The United States and other Western members want the United Nations Secretary General to appoint a citizen of a neutral country to organize and run the conference. The disagreement has delayed the work of the 24-nation United Nations Committee on Peaceful Uses of Outer Space. With the scientific conference unlikely to take place before 1961, several Western members have expressed the hope that the Soviet Union can now be persuaded to an early meeting of the Outer Space Committee.

## MISSILES AND DEFENSE

A powerful radar designed to detect missiles has recently been tested at the missile and surface radar division of the Radio Corporation of America. Situated north of Camden and visible from the New Jersey Turnpike, the radar is housed in a ball-shaped paper and fiberglass "radome" 140 feet in diameter. Similar radars will be installed in Alaska, Greenland, and Yorkshire, England, as components of the Ballistics Missiles Early Warning System (BMEWS) linked to the North American Air Defense Command at Colorado Springs. The antennae of the radars are movable and permit detection and tracking of more than one missile. The RCA radar has successfully tracked Sputnik III and Discoverer VIII (NYT 3/5).

The Defense Department plans to accelerate the Air Force Project Midas to develop satellites capable of detecting missiles immediately after launching. It is expected that such a system of detection might increase the "warning time" (from the 15 minutes provided by the most improved radars) to 30 minutes. It is probable that the 1960-61 budget of Project Midas will exceed \$102,000,000 (NYT 3/15).

With the approval of the Joint Chiefs of Staff the Navy plans to reduce the number of destroyer escort picket ships assigned to the Distant Early Warning System from 36 to 4 by early May. Seventeen ships will be re-assigned, and fifteen will be moth-balled.

An 82-foot Atlas missile guided by a radio-inertial system of controls was successfully fired at Cape Canaveral March 7 and landed within two miles of its target after a 6,300-mile flight to the South Atlantic.

Reportedly less successful have been tests of the Bomarc missile, and the Air Force has requested Congress to reduce the budget for the development of the Bomarc Type B from \$420,000,000 to \$50,000,000. The request has been followed by a bitter debate in the Canadian House of Commons, for Canada is building two bases for the Bomarc B missiles as part of the North American air defense program (NYT 3/25).

Tests of the Navy's Polaris missile are proceeding. The Polaris is a two-stage, twenty-eight foot missile propelled by solid fuel. It can be launched from Polaris submarines and could be installed on surface ships. Nine Polaris ships, each carrying sixteen missiles, have been authorized, and the Administration has requested money for three more in next year's military budget. It is expected that the first Polaris ship will be on station late in 1960. Funds for the Polaris program as of 30 June 1960 total \$2.7 billion. It is predicted that the 1961 budget will provide an additional billion dollars. (NYT 3/28)

## PEACEFUL USES OF ATOMIC ENERGY

**Hydrogen Fusion.** Dr. James L. Tuck, appearing before the Joint Congressional Committee on Atomic Energy, reported the successful fusion of heavy isotopes of hydrogen by his group at the Los Alamos Scientific Laboratory in New Mexico. The apparatus (called Scylla) produces a small, egg-shaped fireball, eight tenths of an inch in diameter with a temperature of about 13,000,000 degrees. In the original Scylla the fireball lasted nine tenths of a millionth of a second and released about 10,000,000 neutrons (this is the key evidence that a thermonuclear reaction was taking place). Further modification produced an instrument extending the duration of the fireball to seven millionths of a second. While the successful fusion reaction was considered an essential first step in the plans to develop a fusion power plant, it still left scientists only about a third of the way towards achieving the temperatures of 50,000,000 degrees or higher required for a thermonuclear fire that would be self-sustaining and produce more energy than it consumed. Dr. Arthur E. Ruark, head of Project Sherwood (the thermonuclear fusion program) estimated that it would be at least 10 to 20 years until the development of the first fusion power plant, if such a plant is at all feasible. (NYT 3/24)

**Project Plowshare.** Plans have been announced for exploding a 10,000 ton nuclear bomb underground in the Salado salt beds (near Carlsbad, N.M.). The test, one of a series designed to study the peaceful uses of atomic energy, is scheduled for January, 1961. "Project Gnome" is aimed at finding out whether the heat and isotopes produced by the explosion can be recovered economically, and also to study seismic and other effects associated with the detection of underground nuclear blasts. Observers from United Nations member countries were invited to attend the test. (W. Post 3/17)

A second test, Project Chariot, is planned to explore the possible use of atomic explosives for the building of coastal harbors. An area on the Northwest Alaska coast near Cape Thompson is the proposed test site. The present plans are to detonate simultaneously one 200 kiloton explosion at a depth of 800 feet and four 20 kiloton explosives at depths of 400 feet. Detailed studies are currently underway to establish the safety of the experiment and it is not expected to be carried out until the spring of 1961, or 1962. (NYT 3/13)

**International Atomic Agreements.** An agreement between the U. S. Government and Yugoslavia was reached on co-operation on the peaceful uses of atomic energy. It was the first such U. S. agreement ever made with a Communist country and could lead to our sending an atomic research reactor to Yugoslavia. (W. Post 4/2)

India signed an agreement with Russia to aid in the construction of an Indian nuclear power station. At the same time, an American delegation was in India to explore the possibility of collaboration on development of peaceful uses of atomic energy. (NYT 3/5)

## TRANSFER OF NUCLEAR WEAPONS

Considerable anxiety was aroused at home and abroad by reports early in March that the U.S. would turn nuclear weapons over to some of its allies or to NATO. It was learned that State and Defense Department officials were trying to obtain an opinion from the Attorney General concerning the legality of a limited transfer of nuclear weapons to allies. The Atomic Energy Law requires that "a measure of control" be retained by the U.S. A week earlier, General Norstad, Supreme Allied Commander in Europe, called for a nuclear brigade made up of battalions contributed by the U.S., Great Britain and France (NYT 3/8). This implied transfer of nuclear weapons to NATO countries.

The possible spread of nuclear weapons aroused opposition from Congress and from the USSR. In Washington, the Joint Committee on Atomic Energy voiced its objections, and Sen. Proxmire (D., Wisc.) proposed a concurrent resolution to this end. The Russian view, expressed in a letter to President Eisenhower, stated that U.S. transfers of nuclear weapons would make it hard for the USSR to refuse similar arms to its allies. The President replied (NYT 3/20) that the U.S. has no such intentions at the present time. Meanwhile General Norstad assured the Joint Congressional Committee on Atomic Energy that there were no plans to turn over atomic warheads to the newly proposed mobile task force within NATO.

## RADIATION FALLOUT AND CIVIL DEFENSE

On March 17, Surgeon-General Leroy E. Burney of the U.S. Public Health Service, announced the initiation of the most comprehensive study undertaken in this country to determine the effects of environmental radiation upon the health of the nation. (HEW Press Release 3/7). Detailed medical and laboratory examinations will be made of 400 people living in the Animas River area of Mexico where food and water have been heavily contaminated by radium from a uranium ore-processing mill and strontium-90 from the Nevada test site. Radiation levels 4 to 10 times the current maximum permissible limit were found there in 1958. The announced purpose of the study is the determination of the effects on man of chronic exposure to low-level radiation, and the precise delineation of the problems, actual or potential, which may exist. This is the first of a projected series of such studies in various sections of the country.

A similar study in the St. Louis, Missouri, "milkshed" was announced on March 24 to determine the significance of previous findings regarding radiation levels in that area (HEW Press Release). Water supply, sources of animal food, climate, farming practices, and other variables associated with radioactivity levels in milk will be studied. The final phase of the study will consist of field experiments to determine whether the radiation content of milk can be reduced by modification of dairy farming practices.

**Atomic Waste Disposal.** The problem of disposal of atomic waste was discussed in the Senate, on March 17, by Sen. Yarborough (Texas) who inserted into the Congressional Record an article from the Reporter Magazine of March 17, 1960. The article emphasizes the dangers and difficulties involved in present methods of disposal of these wastes in coastal waters and in lakes and streams. The lifetime of the barrels containing the wastes is very much shorter than the lifetime of the wastes. Not enough is known about currents and mixing of deep and shallow waters to determine whether deep sea dumping is safe. The article calls for re-evaluation of procedures for the protection of the public from radiation hazards.

**Civil Defense.** The Office of Civil Defense Mobilization has deplored public apathy to questions of survival measures in case of nuclear attack (W. Post 3/24). Rep. Chet Holifield of California stated that a survey showed that the construction of fallout shelters is in "deplorable shape" (W. Post 3/24).

## LOYALTY OATH

The Senate Committee on Labor and Public Welfare has reported out a bill sponsored by Senators Kennedy (Mass.) and Clark (Pa.). This bill would eliminate the "non-disciplinary" affidavit required of students who receive government loans under the 1958 National Defense Education Act (Univ. of Colo. Daily, Feb. 12, 1960).

The disclaimer affidavit requires a student applying for a loan to swear that he does not believe in, belong to, or support "any organization that believes in or teaches the overthrow of the U. S. Government by force or violence or by any illegal or unconstitutional methods." Other recipients of government subsidies and loans, such as farmers, business men and government employees, are not required to take this oath.

Arguments for elimination of the affidavit include: (1) Discriminating as it does specifically against students, it is anti-intellectual. (2) It is probably unconstitutional, for it may violate the protection afforded to an individual by the first amendment to the constitution. (3) It is ineffective, for a subversive person cannot be depended upon to refrain from signing such an oath.

As of March 2, 1960, at least 25 institutions of higher learning (including Harvard and Yale) refused to participate in the NDEA program. Some 60 other institutions have publicly stated their disapproval of the disclaimer affidavit. In some cases, other funds have been made available to students who chose not to sign the loyalty oath.

The FAS is a national organization of scientists and engineers concerned with the impact of science on national and world affairs. The NEWSLETTER is prepared in Washington by FAS members. The staff for this issue: EDITORS: E. Shelton, J. Edgcomb, E. Korn. WRITERS: J. Edgcomb, E. Wright, F. Kameny, E. Kravitz, E. Korn, V. Lewinson, and F. O'Dell.

**TEST BAN**

(Continued from Page 1)

**Control, Staff, Voting**

These interrelated, unresolved points deal with the reins on the control system, covering anything from nationality of technicians to budget matters. The Soviet Union in a "package" plan has proposed that if the United States and Britain accept its formula for a 7-member Control Commission, the Soviet Union will accept the Western plan for control post staffing.

At issue in the control post dispute is the Soviet proposal to have a major portion of each post's staff made up of host country nationals. That is, control posts in the Soviet Union would be largely Russian; in the United States, largely American, etc. This, say the U. S. and Britain, in effect, is nonsense. Control, they say, must be largely checked by outsiders.

In the Control Commission, the West wants a 3-2-2 arrangement; the Big Three, one ally of the West and one of the Soviet Union, and two neutrals. The Soviet Union wants a more equal voice on a formula of the U. S. and Britain plus one ally, the Soviet Union plus two allies, and one neutral nation (3-3-1).

These cover a variety of points, including whether nuclear test explosions should be used in joint research to perfect underground testing methods; nuclear explosions for peaceful uses, and the duration of a voluntary ban on underground tests not now subject to control.

Portions of the treaty already agreed upon are the following:

**Preamble**

Signatories agree that a test ban is "a practical step" directed at "the eventual elimination and prohibition of nuclear weapons under effective international control and the use of atomic energy for peaceful purposes only . . ." The treaty expresses the desire for "permanent discontinuance of nuclear weapons test explosions," and the hope that "all other countries" will join in.

Article I calls for each party "to prohibit and prevent the carrying out of nuclear weapons test explosions at any place under its jurisdiction or control . . ." It further requires each party "to refrain from causing, encouraging, or in any way participating in, the carrying out of nuclear weapons test explosions anywhere."

Four articles deal with operation of a Control Organization, with headquarters in Vienna. A Control Commission would be composed of a representative each from the United States, Britain and the Soviet Union "as original parties," plus "four other parties to the treaty" to be elected for 2-year terms. The Control Organization would include also a Detection and Identification System and an Administrator, and over everything else, a "Conference" composed of parties to the treaty.

The Conference would include up to three delegates per nation. It would elect a president, decide budgetary mat-

ters, review work of the Control Commission, and report to the United Nations.

Each participating nation would agree to accept control components of the system. This would include assuring "adequate and expeditious transportation" to areas of on-site inspection; use of existing aircraft flights over ocean areas to collect air samples; arrangements for aircraft flights for special inspections, and "utilization of existing weather or geophysical exploration vessels . . ."

All necessary assistance and "immediate and undisputed access" from free interference" would be pledged for the aid of groups despatched to any on-site inspection.

The treaty would be open for signature on a specific date and enter into force when the Big Three have ratified it in accordance with their constitutional procedure. The draft text states there is "agreement in principle," but not yet language, on procedure for other nations to join.

A Preparatory Commission of one member from each of the Big Three would begin work starting "the day after" the treaty is signed by the Big Three—without waiting for ratification.

This Commission could borrow money from the United Nations or from governments to prepare groundwork. It would make studies of control post sites, construction, and equipment for inspection, recommend a headquarters site in Vienna, propose a budget, arrange for a conference, and prepare for staff hiring.

**Duration And Review**

The treaty would remain in force "indefinitely, subject to the inherent right of a party to withdraw and be relieved of obligations" if provisions "are not being fulfilled and observed." Two years after coming into force, and annually thereafter, the Detection and Identification System would be subject to review of its effectiveness. Amendments to the treaty would be by two-thirds vote.

Registration of the treaty with the United Nations is provided. The Control Commission could arrange any appropriate agreement with the U. N. or any international organization subsequently created by the parties "to supervise disarmament and arms control measures."

**SUMMIT**

(Continued from Page 1)

have cleared the way for some agreement at the Summit (NYT 3/20). The disarmament negotiations at Geneva are stalled on no common ground, and the Eastern and Western postures at the Summit are unknown. The third major topic is Berlin. Khrushchev announced after his meetings with DeGaulle that the Soviet Union still may sign a separate peace treaty with East Germany if no joint solution of the German problem is reached (NYT 4/3). Adenauer insists, after his interview with Eisenhower, that the West make major concession on Berlin. (NYT 3/21).

**FAS NEWSLETTER**

Federation of American Scientists  
1700 K Street, N. W.  
Washington 6, D. C.

Sec. 34.66, P. L. & R.  
U. S. POSTAGE  
PAID  
WASHINGTON, D. C.  
PERMIT NO. 9124

# Federation Of American Scientists

## EXECUTIVE COMMITTEE 1960-61

M. Stanley Livingston, Cambridge Electron Accelerator—Chairman  
William C. Davidon, Argonne National Laboratory—Vice Chairman  
Edward D. Korn, National Institutes of Health—Treasurer  
Leonard Rodberg, University of Maryland—Secretary  
David R. Inglis, Argonne National Laboratory—Chairman (1959-60)

### *Members:*

Donald G. Brennan, Lincoln Laboratory  
Peter G. Bergmann, Syracuse University

## DELEGATES-AT-LARGE

Peter Axel, University of Illinois  
Peter G. Bergmann (see above for address)  
Donald G. Brennan (see above for address)  
Owen Chamberlain, University of California (Berkeley)  
Waldo E. Cohn, Oak Ridge National Laboratory  
C. D. Coryell, Massachusetts Institute of Technology  
Martin Deutsch, Massachusetts Institute of Technology  
Freeman J. Dyson, Institute for Advanced Study  
John M. Fowler, Washington University  
Augustus H. Fox, Union College  
Arthur W. Galston, Yale University  
Edwin L. Goldwasser, University of Illinois  
David L. Hill, Sunset Drive, Weston, Connecticut  
David R. Inglis, Argonne National Laboratory—Chairman (1959-60)  
Marvin I. Kalkstein, Cambridge Research Center  
Walter E. Meyerhof, Menlo Park, California  
Jay Orear, Cornell University  
John Phelps, The Ohio State University  
David Pines, University of Illinois  
Charles C. Price, University of Pennsylvania  
Arthur H. Rosenfeld, University of California (Berkeley)  
Matthew Sands, California Institute of Technology  
Walter Selove, University of Pennsylvania  
Emma Shelton, National Institutes of Health  
V. F. Weisskopf, Massachusetts Institute of Technology  
Hugh C. Wolfe, Cooper Union

(Affiliations listed for identification only)

---

## FAS Policy Statement On Nuclear Test Ban

The following statement of F.A.S. policy was prepared at the meeting of the Council in Washington, D. C., on April 24 and 26, 1960.

Since its formation in 1946 the Federation of American Scientists has been primarily

concerned with the threat of nuclear war. Today we are encouraged by the growing realization in this country that genuine security can best be assured by some form of arms limitation. The acceptance by the

(Continued over)

FAS POLICY—(Continued)

Russians of a UN-related inspection agency with international personnel, operating within Russian territory, represents a major change in the intransigent "iron curtain" philosophy which has been a barrier to cooperation between the US and the USSR. If the current Geneva negotiations on a nuclear test ban treaty are successful, we will have taken a major first step toward limiting the arms race.

Many essential features of that treaty have already been agreed upon. On-site inspections, already accepted in principle, are an important component of the control system and agreement on the number of such inspections remains to be negotiated. We commend the positive stand, announced recently by President Eisenhower and Prime Minister MacMillan, toward resolving the remaining differences among the parties to the Geneva negotiations.

In considering the risks and advantages of the proposed agreement, one must look not only at the technical problems of detecting evasion but also at the political and human factors involved.

As scientists we are aware of the risks necessarily involved in any test limitation. Nonetheless, the proposed monitoring system, though admittedly limited in capability in its early stages, has great value as a first practical step in controlled disarmament. Furthermore, as the recent hearings conducted by Congressman Holifield clearly brought out, not only has considerable effort been invested in the study of evasion techniques, but virtually no effort has yet been directed towards improving surveillance techniques. Research in surveillance techniques is needed. Scientists know that in-

genious techniques for test detection are as likely to be developed as are ingenious techniques for evasion.

As scientists, we further recognize that 100% certainty of detecting and identifying all underground explosions is not likely to be achieved. But we also recognize that the benefits accruing to the US by regaining the moral and political initiative—by installing detection stations and by starting surveillance experiments—outweigh by far the risks involved in allowing, for a limited time, undetected small tests. Having considered the uses which might be made of data from the kinds of tests that might go undetected, we are firmly convinced that the threat to American security from secret testing under a test ban agreement is small compared with the hazards involved in resuming an uncontrolled arms race.

If we do not reach a test ban agreement at this time, world tensions will be aggravated and the weapons race will be accelerated. And we will practically assure that China and other nations will ultimately obtain nuclear weapons. Nuclear reactors are now operating in more than twenty countries, all producing plutonium, a nuclear explosive, and none subject to international control. These countries include China, West Germany, Japan and others with the industrial and economic capabilities to make nuclear weapons. The diffusion of weapons to them and other countries poses a grave and irreversible threat to our future security.

In this situation, the US and the USSR share a mutual interest in survival which provides a sufficient basis for reaching and living up to a mutually advantageous agreement.