

F. A. S. NEWSLETTER

Volume 17, No. 7
September, 1964

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

Nuclear Weapons in Campaign

Control over the use of nuclear weapons has become a major campaign issue between Senator Goldwater and the Johnson Administration, although neither side has defined its position with great clarity.

The question goes back to a news conference of the Senator's on last October 24. Goldwater then advocated cutting U.S. ground forces in Europe by "at least one-third." To compensate, he proposed giving NATO commanders (later he amended this to the NATO supreme commander only) power to use tactical nuclear weapons in an emergency, such as a surprise massive Soviet ground attack. The issue was revived at the Republican Convention this summer, when a group of Goldwater's opponents led by Governor Scranton of Pennsylvania unsuccessfully sought a platform pledge of continued support for exclusive control by the President over use of nuclear weapons.

Since then, Democratic campaigners have taken to attacking Goldwater as "trigger-happy," in the expectation that the Senator's stand, coupled with his hard-line approach to foreign policy, would frighten many voters. On a higher plane, President Johnson and Secretaries Rusk and McNamara have reaffirmed the need for sole Presidential control over all nuclear weapons. Mr. Johnson's position is that "final responsibility for all decisions on nuclear weapons must rest with the civilian head of this government, the President of the United States."

Senator Goldwater, whose position was not made any easier when he referred to smaller nuclear weapons as "conventional," seems to be feeling the heat of these attacks. Recently he has claimed that his position is in fact identical to the Administration's, that he is not advocating any authority for field commanders which they do not now have. Goldwater's aides point especially to recent articles (in Time magazine and U.S. News and World Report) which claim that the NATO supreme commander has the right to use atomic weapons in certain contingencies, for example in the event of an attack so massive as to destroy communications.

Other reports have indicated that U.S. commanders in several theatres have similar authority. The Defense Department traditionally has declined to comment on its contingency plans: the Pentagon does not seem disposed to help either the Russians or Mr. Goldwater by giving a full blueprint of the President's system of command. It thus seems that the issue will stay open for political charges from both sides. (N.Y. Times, 9/23, 9/27.)

TEST BAN TREATY FIRST ANNIVERSARY

Saturday, Oct. 10, 1964, is the First Anniversary of the coming into force of the "Test Ban Treaty." The FAS Executive Committee feels that it would be most appropriate—and a useful reminder of the progress still to be made in slowing down the arms race—for every FAS member to write to the President and to local newspapers celebrating the occasion and urging persistence in seeking workable disarmament agreements.

Evidence of public support was essential to Test Ban Treaty ratification. Similar support is needed for present efforts. Churches, schools and business groups should also be urged to commemorate the date.

FAS Proposals to Democratic Convention

On August 17, Dr. John Toll testified on behalf of the FAS before the Platform Committee of the Democratic National Convention. The FAS urged adoption of six policy positions in the field of international affairs. Three of these policy statements, on the NATO multilateral force, on ballistic missile defense, and on chemical and biological warfare, had also been presented at the Republican National Convention and appeared in the June Newsletter. The other three statements, reprinted below, were presented as "items that are the natural continuation of the presently established policies of the Democratic Party."

ARMS CONTROL

In accordance with the promise of the 1960 Democratic Party Platform, the Arms Control and Disarmament Agency was established in 1961 as the focus within the federal government of our nation's efforts toward international control of armaments. This new agency has been of great value in various steps toward disarmament which have been achieved over the past year, including the limited test ban treaty, the establishment of the direct line between Moscow and Washington, the UN General Assembly resolution against the orbiting of nuclear weapons in outer space, and the reciprocal cut-backs in the production of plutonium. We believe that the "Arms Control" section of the 1964 Democratic Party Platform should cite these achievements and should promise to see that the ACDA will be given permanent status and increased support.

The Democratic Party Platform should also endorse strongly our government's pending proposals for international agreements toward general and complete disarmament. It is important that the platform support the Administration's willingness to consider reasonable disarmament initiatives. Encouraging possibilities for further agreements include the United States' proposal for a verified missile freeze, the Russian and U. S. proposals on bomber destruction, the extension of the International Atomic Energy Agency's supervision to more reactors producing significant amounts of weapons material, registration of all orbital flights with the United Nations, exchange of observers at transportation centers and ports of entry, mutual agreements on inspection by satellites and aircraft, extension of the test ban treaty to include all nuclear weapons tests, and agreements to limit the spread of nuclear weapons.

Let every nation recognize that, in spite of recent encouraging agreements which lessen tensions, our peril increases. Indeed, the number of megatons in the world's weapon arsenals and the number of nuclear powers continues to mount. Today, both major power blocs have the power to destroy each other many times over. Great reductions in armaments are possible in initial stages of agreement while still permitting each group to maintain what it considers adequate means of deterrence. The platform should commend the recent reductions of U. S. Defense Department expenditures and should support our government in other, more far-reaching initiatives and restraints that may lead to reciprocal actions toward the reduction and control of armaments.

STRENGTHENED UNITED NATIONS

The 1964 platform should again express support for strengthening our commitments to the United Nations and its specialized agencies. We believe that the first three paragraphs of the 1960 platform section on "The United Nations"

(Continued on Page 4)

SCIENTIFIC ADVICE FOR CONGRESS

The interest of Congress in science was essentially non-existent before Sputnik and has undergone several changes since then. For several years after Sputnik, Congress, in an apologetic and uncritical manner, granted almost every research and development request which came before it. Then a year or two ago came a rearing back for a second look at the fantastic growth in R and D. Unfortunately no distinction was made between basic scientific research and development. Several mild speeches suggested a divorce, but even science researchers—not developers—in testimony before Congressional committees spoke as if the R and D bonding were established and indissoluble. The immediate effect then was rather rough treatment of scientific witnesses and of science requests. A longer range effect was the establishment of two House Committees: The House Select Committee on Government Research (Elliott committee), and the Subcommittee on Science, Research, and Development of the House Science and Astronautics Committee (Daddario committee). This year seems to show a settling down in the way Congress looks at science.

Underlying the entire problem has been the corollary problem of establishing an effective method by which the Congress could obtain scientific information and advice. Whereas the Executive Branch has had a long history of science advisors, science panels, science consultants, and science employees, Congress has had no such history. Aware of this lack and also aware of the fact that scientists testifying at Congressional committee meetings were always testifying for the Executive Branch viewpoint, Congress entertained several remedies. Senator Bartlett (D., Alaska) suggested the establishment of a Congressional office of Science and Technology. A Washington industrial representative suggested a Legislative Scientific Service with 100 professional and 200 supporting staff members. Rep. Sibal (R., Conn.) suggested that each house appoint a three-member advisory panel consisting of a chemist, a biologist, and a physicist. The Daddario committee has been in discussion with the National Academy of Sciences, concerning how the Academy could provide Congress with information and advice on specific questions. This subcommittee also has appointed a seven-member research management advisory panel. The parent committee—on Science and Astronautics—has established a fifteen-member advisory panel. And the Elliott committee has established eight advisory panels, each with a different area of concern.

A recent report by the Daddario committee (*Scientific-Technical Advice for Congress—Needs and Sources*) suggests that Congress actually already is going about the task of getting the kind of scientific advice it needs in the right way when it strengthens existing modes of action and resists the establishment of new ones. A paper used by those preparing the Daddario reports says:

The experience of the Legislative Reference Service indicates that people trained in a variety of disciplines have been effective in helping to meet congressional needs. Over the past few years, several hundred requests for information and advice in matters involving science and technology have been handled by a dozen or more members, or former members, of the Legislative Reference Service staff. Close relationships have been built up over the years with congressional committees and their members dealing with defense, space, atomic energy, public works, and other fields where science and technology have been involved as elements of public policy. The experience thus gained indicates that science and technology are not basically different from the other complex fields in which Congress operates, and that the problem of Congress is basically that of relating science and technology to public policy. To assist in this, Congress needs staff generalists, rather than laboratory scientists, to assist it in playing the independent role in policy guidance assigned it under the Constitution. Admittedly, a basic education in one of the areas

of science or engineering is a good background for such generalists, but training in political science, economics, law, or other social studies has also formed an adequate background for many staff members who have become proficient in working with Congress on scientific matters.

The committee report is against adding scientists as scientists to the staff of Congressional committees and instead recommends the appointment of *ad hoc* advisory panels to serve "during the lifetime of the particular matter to be handled." It further suggests strengthening the Legislative Reference Service, that part of the Library of Congress which furnishes research services of several kinds to Congress.

As if in anticipation of this suggestion, Librarian of Congress L. Quincy Mumford recently announced the establishment of a new Science Research Policy Division in the Legislative Reference Service and the appointment of Edward Wenk, Jr., as head of the division. Wenk "will serve in the Legislative Reference Service as a Congressional consultant in scientific and technical developments that affect public policy, and he will also serve the Library as a whole, in his capacity as special advisor to the Librarian and as coordinator of science information services furnished to Congress," according to the announcement of Wenk's appointment. Wenk goes to this job from the Office of Science and Technology, where he was technical assistant to the director of OTS and secretary of the Federal Council for Science and Technology. He also was staff director for the Gilliland panel.

The establishment of the new division in the Legislative Reference Service—and the appointment of Wenk as its head—will give Congress a new kind of source of scientific information without giving it a new kind of organization to deal with. The double feature of being able to use old, established routines in order to obtain new science information services should attract many Congressional customers to the new division. One only hopes that the congressmen won't have to wait while the Science Research Policy Division staff answers an inquiry about DNA from a high school student who has a term paper due in a week.

DISTRIBUTION OF R & D FUNDS

A survey made by the Daddario committee on the distribution of Federal research and development dollars in fiscal year 1963—the latest year for which figures have been compiled—shows that California, with \$12 billion in R and D money, got 38.4 per cent of the national total, while New York, a weak second, got 9.2 per cent and Massachusetts got 4.6 per cent. These three states totalled 52.2 per cent of the total. Then came: Pennsylvania, 3.5 per cent; Maryland, 3.3 per cent; Texas, 3.3 per cent; Washington, 3.2 per cent; New Jersey, 2.9 per cent; and Florida, 2.5 per cent. Thus, nine states received 70.9 per cent of the total. What seems to be, at first glance, an inequitable distribution looks quite different if looked at on a per capita basis (California third, New York below the national average), on the basis of number of industrial employees (Nevada first with \$21,000 per employee, and Maine last with \$1.50 per employee), or on the basis of number of scientists (Nevada first with \$464,000 per scientist, California second with \$189,000 per scientist, and Wyoming last with \$4,000 per scientist).

FAS NEWSLETTER

Published monthly except during July and August by the Federation of American Scientists, 2025 Eye St., N. W., Washington, D. C., 20006. Subscription price: \$2.00 per year.

Chairman Dr. Peter G. Bergmann
The FAS Newsletter is prepared in Washington by FAS members. The staff for this issue were: Editors—L. & M. Gellert; Writers: W. G. Rosen.

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

UN REPORT ON SCIENCE FOR UNDERDEVELOPED COUNTRIES

(A new UN Committee established by the Economic and Social Council is studying a program of national and international steps to help underdeveloped countries make the best possible use of science and technology in their efforts to raise living standards. Excerpts from the Committee's first report, as summarized in the *United Nations Review*, April 1964, appear below.)

The Committee recommended:

—Creation of what might be called an International Science Corps through which scientists of the developed countries could contribute to world development.

—Supply of modern equipment for training and research to developing areas.

—Devising of "new education and training systems" especially appropriate for developing areas.

—Special attention for training scientific and research personnel, specialized workers, technicians and engineers in the developing countries.

—Drafting of standards for a "minimum university" to help developing countries introduce or extend facilities for higher education.

—Establishment of more national and regional research centers, not merely as libraries but with staff trained to seek out scientific information and provide it for local application.

—Expansion of agricultural and industrial advisory services to promote practical use of known technology.

—Designation of one central coordinating agency by each developing country to deal with all technical assistance available from the United Nations, its agencies, and other sources.

—Additional activities in science and technology by the United Nations family of organizations.

One central problem, the Committee found, was the cost of development.

"Questions of finance pervade every topic the Committee has considered," the report states. "Science and technology offer the promise of new and better ways of achieving economic development, but achieving such development requires great human and material investment." . . .

In its report, the Advisory Committee expresses belief that it would be useful to prepare a short list of problems meeting two criteria: (1) a solution would offer unusually great benefits in developing countries; and (2) the state of science and technology is such that a break-through may be realized if a "massive, worldwide attack on the problem is made."

As a first step, the Committee considered five objectives "of outstanding importance for development"—the provision of adequate food supplies, the improvement of health, more complete understanding of population problems, the most effective use of natural resources including the solution of problems of industrialization, and "the invention and application of new educational techniques specially suited to the needs of developing countries."

As soon as possible, the report states, the Committee will define problems requiring priority attention "in more explicit terms" and will consider practical steps needed to intensify the attack on such problems on a worldwide scale.

The report states that "a sense of mission" should be aroused to increase cooperation between scientists, universities and research institutes of the developed nations and those of the developing areas and that the Committee might help stimulate such cooperation.

Besides suggesting a kind of International Science Corps, it proposes extension of the "well-tried method" of affiliation between institutions of developed countries and those in developing areas; assignment of "eminent men of science" from national academies or similar bodies for periods of work in developing countries; liberalized arrangements for sabbatical leaves to permit scientists and engineers to serve in developing areas; the holding of conferences of learned societies in developing countries; and perhaps a United Nations meeting of high-level representatives of universities and research institutions to stimulate interest.

(Continued on Page 4)

AEC MONOPOLY ON NUCLEAR FUEL ENDED

Legislation signed by President Johnson on August 26 has ended the Government's monopoly on legal title to all fissionable materials in the U.S. Henceforth, private ownership of enriched uranium, plutonium, and U-233 will be permitted, and by the early 1970's the nuclear power industry will have to buy, rather than lease, any Government-produced materials. However, the Government will continue to control and supervise "possession, use, and production" of all fissionable material.

This and related changes in the Atomic Energy Act of 1954 have been under consideration in the Joint Committee on Atomic Energy for well over a year. With the approach of economic nuclear power and a growing civilian industry, the principle of private ownership had gained widespread support, in the JCAE, the AEC, and the nuclear power industry, and also in the coal industry, which has long charged that nuclear power was being subsidized by the system of Government production, lease, and buy back of nuclear fuels.

Last June the JCAE held further hearings and considered an AEC draft of legislation. While agreement seemed near on major points, there were many questions of details, ranging from the interests of U.S. uranium miners to the JCAE's concern with its own role and the AEC's policies in the future of nuclear power. With Congress facing the Civil Rights bill and other vital legislation, plus election-year adjournment pressures, there seemed little chance that the law would be changed this year. The speed and unanimity of action apparently was due to the initiative, skill, and power of the JCAE, which in a few weeks revised the draft and had it accepted by all sides.

The legislation is a series of amendments to sections of the Atomic Energy Act of 1954, and the most far-reaching since 1954's revision of the original Act of 1946. The amendments deal with details for the transition to "private ownership" and many related questions, such as AEC guarantees to purchase domestic byproduct plutonium (up to 1971) and scarcer U-233 (for 10-year periods). From January 1969, Government diffusion plants may provide "toll enrichment" of natural uranium, for foreign or domestic clients: these provisions stem largely from current "cutbacks" and future stretchout for the diffusion plants. The AEC will draw up criteria for toll enrichment which will be scrutinized by the JCAE before becoming effective. Rejecting demands made during the hearings, the law does not require the AEC to recover full costs of enrichment, nor does it bar enriching foreign uranium for use in the U.S. The legislation does not touch on a longer-range question which the AEC and industry plan to study: the possibility that private enterprise might buy the Government-owned diffusion plants. (Even more speculative is the possibility of new plants for gas centrifuge separation of U-235: the AEC recently tightened secrecy on centrifuge technology and discounted the prospects that "other methods" would be cheaper than diffusion.)

The legislation appears likely to have long-range effects on many atomic energy questions. On the international aspects, both Congress and the Administration have stressed that "private ownership" will not erode the ability of the U.S. Government to enter disarmament agreements, including control of nuclear materials. (N.Y. Times, 6/28, 8/27; AIF Memo, July & Aug. 1964.)

SCIENTISTS AID CANDIDATES

Formation of a bipartisan committee of "Scientists and Engineers for Johnson" was announced last August 13. The national organizing group included Dr. George Kistiakowsky and Dr. Jerome Wiesner, respectively Science Advisers to Presidents Eisenhower and Kennedy, and over forty professors, scientists, and corporation executives. In its statement of principles, the group advocated "unswerving dedication to the goals of limiting and ultimately terminating the arms race through international disarmament with adequate safeguards." It also urged the retention of exclusive Presidential control over the use of nuclear weapons. The committee proposed more extensive exploration of the oceans and the

(Continued on Page 4)

UN REPORT ON SCIENCE

(From Page 3)

INSTITUTIONS REQUIRED IN DEVELOPING COUNTRIES

"The main scientific and technological resources of a country lies in its trained people," the report states in examining the types of planning groups, policy organs, and educational institutions needed in developing areas. The number of specialized workers, technicians, engineers, scientists and researchers, together with their distribution at different levels, "defines the capability of a country." Delays or lack of attention in building up scientific capability "would undoubtedly lead to a technological and consequently economic dependence."

The Committee stresses the need for each developing country to have a central governmental structure for scientific and technological policy, directly related to the planning group in charge of development.

In discussing education and training at various levels, the report expresses "concern at the slow processes" now employed and urges development of new systems, "as otherwise half a century may pass" before adequate numbers of scientists and technologists can be prepared.

A section on the problem of university education in the newly emerging countries expresses belief that "each country should have its own higher educational institutions," and that study is needed to find ways of bringing the establishment of such institutions financially within the reach of even small developing countries. As one step, standards "for a multipurpose scientific institution—a minimum university, so to speak"—might be defined to help countries determine what teaching staff, equipment and attendance would be necessary.

The problem of recording and disseminating existing knowledge of scientific and technological advances is "of growing importance to all countries," the Committee reports, and present methods "clearly need to be improved."

SCIENTISTS AID CANDIDATES

(From Page 3)

earth's crust and recommended "greater emphasis on the human benefits that can accrue from space research."

Late in September, it was reported that the Republican National Committee would formalize a group of Senator Goldwater's advisers as a Task Force on Science, Space and the Atom, headed by Lewis Strauss, former Chairman of the AEC. The group includes Drs. Edward Teller, Willard F. Libby, and Shields Warren, and Gen. Arthur Trudeau. It was also reported that Citizens for Goldwater had enlisted ten members of a planned committee of "40 to 50 prominent scientists and engineers."

FAS NEWSLETTER

Federation of American Scientists
Suite 313
2025 Eye Street, N.W.
Washington, D. C. 20006

Volume 17, No. 7

September, 1964

FAS PROPOSALS

(From Page 1)

remain as valid and as eloquent today as when they were first adopted four years ago, and we urge that they be repeated in the 1964 platform.

It would be desirable for the 1964 statement then to include specific commendation for the support which our government has given to the UN Peace-Keeping operations in the Middle East, the Congo, Cyprus, and Southeast Asia. Let us reaffirm our aim of increased support for the goals of the United Nations' Charter and our recognition of the great value of the United Nations as a forum for discussion of world problems and as an invaluable agent in the control of crises and settlement of disputes.

As the recent crisis in Cyprus has demonstrated anew, the United Nations' Peace Forces should be continued and placed on a more reliable basis, so as to be able to respond promptly wherever disorder threatens to bring an international crisis. Such UN Peace Forces would not force a particular decision, but would only establish and preserve order so as to permit the dispute to be settled by negotiation, mediation, or reference to the International Court. As the recent examples of UN Peace-Keeping and inspection teams have shown, this use of international organization to prevent wars is in the interest of every nation, and our nation must continue its effort to place the financing of such UN operations on a more reliable basis.

The 1960 platform also included a proposal for the repeal of the "self-judging reservation" in the United States' adherence to the World Court. This promise has not yet been fulfilled, but the reasons for it remain as compelling as ever, and the commitment of the Democratic Party to this goal should certainly be reaffirmed in the 1964 platform.

NATIONAL SPACE PROGRAM

The 1960 platform supported a strong program of space exploration. The FAS recognizes space research as a great scientific opportunity and approves of the national commitment for a major program in this field. This program should be viewed as part of the total national research effort and the actual space experiments should be coupled with a greatly expanded program of related laboratory investigations. Each specific problem should be studied by the methods that are most effective and economical, and expenditures should be primarily determined so as to yield the greatest possible long-term scientific benefit.

Space research offers particularly great opportunities for beneficial international cooperation. We applaud the steps taken by our government in this area. The comparatively open information policy of announcing failures as well as successes and of promptly releasing scientific information should be continued, since it is essential for proper public understanding of the space effort.

Second Class Postage

Paid at

Washington, D. C.

Return Postage
Guaranteed