

# F. A. S. NEWSLETTER

Published by the  
FEDERATION OF AMERICAN SCIENTISTS  
1805 H Street, N.W., Washington 6, D.C.  
Charles C. Price, Chairman

No. 57 - 2

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February 18, 1957

## TIME FOR H-BOMB TEST BAN IS NOW

During the recent presidential campaign, public discussion of proposals to ban H-bomb tests tended to focus on the easily dramatized radiation hazards aspects. From one point of view, any risk, however small, is a basis for concern; but when it comes to evaluation of the risk, estimates differ by factors of 10 (see article on p. 2). As pointed out by David R. Inglis in an excellent discussion in the January, 1957, Bulletin of the Atomic Scientists, clearer and more powerful arguments are to be found in the important implications of a test ban as it might affect prospects for international agreements on the broader questions of inspection and eventual disarmament.

The more important advantages of a test ban cited by FAS -- in testimony before the Senate Disarmament Subcommittee last June 8, and in a news release last Oct. 24 -- included the points that such a ban would represent a break in the years of stalled negotiations and, by establishing a precedent, could lead to more comprehensive agreements; that it might retard the entry of new countries into the nuclear weapons field and thus avoid a many-sided atomic arms race; and that it might reduce the international tensions occasioned by continuing tests with their implications of constantly improving techniques of destruction.

**TIME RUNNING OUT** Inglis warns, in his Bulletin article, that the time for capitalizing on the opportunity offered by a test ban agreement is limited. If the atomic arms race continues, he observes, we will soon see many smaller powers develop nuclear weapons and, eventually, the intercontinental ballistic missiles to deliver them. "Unless further weapons development is frustrated, many nations will presently have swift and devastating missiles effectively concealed in scattered holes in the ground, ready to destroy distant cities in a matter of minutes at the push of a button."

Inglis goes on to consider at length the question of how a test ban might affect the "balance of deterrence." He speculates that one reason for unwillingness to discontinue testing may be the need for further improvements in H-bomb warheads for arming the ICBM, and concludes that, if discontinuing tests would make the age of push-button warfare more remote, it is another good reason for stopping now. "What we now regard as a "commanding lead" in atomic armaments will become less important as each side approaches the ultimate capacity to wreak total destruction in a matter of minutes, he says, and continues:

"The probability that one side or the other will make a technical breakthrough seems greater with unlimited development than after cessation of tests. This is a consideration that makes it seem more to our advantage to stop tests, because we know that we would not use a breakthrough as an occasion for attack whereas we must assume that the Russians would. The administration belief that we operate better under the present wide-open ground rules appears to be based on confidence that with unlimited research we shall make all important technical breakthroughs before the Russians do. The unpredictable nature of new developments makes this confidence seem unjustified, even after due allowance for our highly successful performance to date."

**FAS** The need for positive and immediate action is clear.  
**RENEWS** At its meeting on Feb. 2, the FAS Council approved a  
**PLEA** new policy statement on arms limitation, with particular emphasis on an H-bomb test ban as a first step.  
The statement commended the Administration for its acceptance

of step-wise inspection and for its offer to divert all nuclear production to non-military use, if other nations would agree. However, it added that attempts to implement these proposals should not be allowed to interfere with the limited but more approachable goal of a test ban. "For more than a decade," the Council observed, "the techniques of sudden annihilation have been advancing alarmingly rapidly," and "rapid advances in international political arrangements are necessary if disaster is to be avoided." (Copies of the Council statement are available on request; members already have the text in Members' Bulletin #25.)

**UN PROPOSALS** Hope that some agreement to curb tests may yet be reached is raised by 3 new proposals submitted to the UN's 80-nation Political Committee on Jan. 21: (1) a joint proposal by Japan, Canada and Norway, calling for a system of advance registration of all nuclear tests and radiation monitoring to be conducted by UN workers; (2) a Swedish proposal which would, in effect, place a 2-year moratorium on nuclear tests by banning all nuclear explosions until the UN Scientific Committee on the Effects of Atomic Radiation completes its studies (this 15-nation committee is scheduled to report by July 1, 1958); and (3) a Philippine proposal for the establishment of a common testing ground as the only place where nuclear tests would be allowed. According to this plan, test explosions would be registered in advance and each country would be limited as to the number and size of explosions permitted each year.

The 3-nation proposal is receiving the widest support, including that of the US, as announced by Ambassador Lodge on Jan. 25. Several member nations, including Russia and India, claimed that this proposal did not go far enough and called instead for an immediate ban on all nuclear weapons testing. The UN Political Committee voted unanimously on Jan. 25 to refer these proposals and the whole problem of disarmament to the UN Disarmament Commission, whose 5-power Subcommittee (US, USSR, UK, Canada, and France) is scheduled to begin talks in London March 18.

**BUT THE TESTS GO ON** On the very day these proposals were discussed in the UN, the AEC announced that the Russians had set off what is at least their fifth nuclear explosion since last August. The US and England are also planning new tests this year. The US schedule includes only the smaller varieties, to be set off at the Nevada test site. At least some of these will be dangling from captive balloons at various altitudes -- probably inspiring the title "Operation Plumb-bob" for the series. The Army's 175-mm atomic warhead projectiles are also to be tested in this series.

Britain is now setting up its equipment for a series of explosions later this year on Christmas Island, an atoll about 1200 miles south of Hawaii. Japan's Foreign Minister announced on Feb. 1 that his country has asked Britain to suspend her proposed series, expressing fears that fish and food crops might be contaminated. On Feb. 11, however, British Foreign Secretary Selwyn Lloyd told the House of Commons: "The Soviet Union and the US had their nuclear tests, and we intend to have ours. The explosions will take place far from any inhabited islands and the tests will be so arranged as to avoid danger to people or property." He stressed that "all tests will be high air bursts which will not involve a heavy fallout," and that "the firings will not take place under any conditions in which inhabited islands might be affected by radioactive material."

## The Swing to Guided Missiles

Events repeatedly emphasize the rapid shift in US defense planning to near-complete reliance on guided missiles and artillery projectiles with atomic warheads. This is, in part, dictated by the high cost of being prepared with both conventional and modern weapons. Another reason for this shift was indicated by Air Force Secretary Quarles in a recent speech before the Reserve Officers Assoc. He believes that no atomic power would accept defeat before bringing its best weapons into action, and that, "if the losing side resorted to atomic weapons, the winning side would also be forced to use them."

**SYMINGTON REPORT** The effect of decreased spending on conventional weapons was the theme of the report of the Democratic majority of the Senate Subcommittee investigating the status of US air power vis-a-vis Russia. The Symington report contends that the US is more vulnerable than ever before to Russian attack, and points out that the USSR has more combat planes than we, while developing new ones more rapidly. Secretary Quarles, testifying before the House Armed Services Comm., did not deny this, but stated that our growing stockpile of nuclear weapons and the development of more modern delivery systems increases our retaliatory powers.

The majority report charged that the present Administration has too frequently placed "financial considerations" ahead of defense requirements. The committee Democrats further accused the Administration of failing to inform the American people of the "great and growing strength of the Communists," and of failing to develop sufficient airlift and military forces to fight "brush fire" wars. Sen. Saltonstall, presenting the views of the Republican members of the committee, expressed his confidence that our combined military forces "make us superior to the Soviet Union today." The minority report said American policy should not be to engage in a "numbers race with Russia," but rather to develop such overwhelming retaliatory power "that no enemy would dare to attack us."

**SANDYS VISIT** The trend toward reliance on missile and atomic weapons is also apparent in the policies of other nations.

The future character of the British military establishment, in view of the UK's financial inability to support large military commitments and the increased cost of modern ordnance, were the subject of recent talks held in Washington between Britain's Defense Minister Duncan Sandys, his American counterpart Secretary Wilson, Secretary Dulles and President Eisenhower. Although conference details have not been given out, it is believed plans were formulated for the US to supply guided missiles to Britain.

As an outgrowth of the NATO talks last December, military units of our Western allies are being trained by the US to use modern weapons and will be supplied with guided missiles capable of carrying nuclear warheads. It is reliably reported that Matador guided missiles will soon be stationed in Formosa, and although there are no plans "to bring atomic weapons into South Korea," the 8th Army Command there is conducting courses for its officers on "the tactical employment of atomic weapons" (Washington Post, Feb. 2, 1957).

### CONGRESSMEN PROPOSE RADIATION CENTER

The need for further organized effort to gather information and conduct research in the dangers of atomic and X-radiation was made clear in the "Findings and Recommendations" of the Nat. Academy of Sciences committee on the biological effects of atomic radiation. Following recommendations made in their summary report, released last June 13 (see NL 56-6), Sen. Richard L. Neuberger and Rep. Charles O. Porter, Oregon Democrats, have introduced bills (S1228, HR 4820) providing for a voluntary program of lifetime records of exposure to radiation. The program would be coordinated by a new Office of Radiation Health Control in the Dept. of Health, Education and Welfare. The bills would also provide for establishment of a National Radiation Health Institute to conduct research on the health hazards of radiation. In a press conference on Feb. 13, Sen. Neuberger said: "There is no doubt of the danger of radiation to mankind. Scientists may differ over the degree of risk, but doubt has vanished as to the existence of peril."

### DISARMAMENT STILL IN THE WIND

Despite a return of the "cold war" atmosphere, the dangers inherent in a continuation of the international arms race are so overwhelming that the major powers are anxious to continue disarmament negotiations. On Jan. 25, the UN General Assembly's Political Committee unanimously recommended the continuation of disarmament discussions. The Committee placed special emphasis on Eisenhower's suggestions for military "blueprint" exchange and aerial inspection and on Bulganin's ground inspection plan. The UN Disarmament Subcommittee was urged to debate various disarmament proposals in private sessions (beginning March 18), as a prelude to another General Assembly session on the subject.

**HIGH-LEVEL TALKS ?** Departing from the intransigent tone of its Nov. 17 disarmament proposal, the Soviet government indicated, through a Tass News Agency dispatch on Feb. 1, that it was again ready to enter into serious negotiations on disarmament and control of nuclear weapons. According to the N.Y. Herald-Tribune News Service, the Tass dispatch "conceded that Russia's disarmament plan of Nov. 17 was not a take-it-or-leave-it proposal, but could serve as a 'good basis' for negotiations." This attitude was also reflected in the USSR's agreement (announced on Feb. 7) to resume disarmament talks in London next month.

The USSR is now attempting to modify the London meeting to conform with the original Soviet proposal for a "high-level" conference. In letters to the Big 3 and Canada, the suggestion was made that the Disarmament Subcommittee meeting be raised to the ministerial level and include chiefs of staff and experts on economics and finance. US reaction to this Soviet proposal was described as cool; however, it was considered as an indication the USSR is taking the forthcoming London meetings seriously.

**DISARMAMENT SUBCOMMITTEE** The special Senate Disarmament Subcommittee of the Foreign Relations Committee (see NL 57-1) was granted an additional appropriation of \$30,000, and an extension of its mandate to June 30, 1957.

### FACTS ON CURRENT FALLOUT HAZARDS

From analyses of the strontium-90 contents of about 500 autopsy samples of human bones obtained from 17 stations in a worldwide network, Kulp, Eckelmann, and Schulert have presented data on the present Sr<sup>90</sup> burden from fallout (Science, Feb. 8). They conclude that the present worldwide average content of Sr<sup>90</sup> in man is about 0.12 micromicrocuries per gram of calcium. Of the 199 cases from North America, 89% fell within a factor of 10 of the average. The average value is 1/10,000th of the presently accepted maximum permissible concentration (MPC) for occupational exposure, 1/100th of the concentration at which the British Medical Council suggested "the need for immediate consideration of the problem." Although the average values for different continents showed no marked variations beyond the expected somewhat lower values for the Southern hemisphere, a definite age effect was observed. Young children have 3 to 4 times more Sr<sup>90</sup> per gram of calcium than adults.

The measured average Sr<sup>90</sup> content is in quite good agreement with a predicted value based on fallout measurements and discrimination factors in the soil-plant-milk-human chain. Carrying the prediction further, the authors estimate that in 1970, as a result of the 50 megatons of fission already exploded, the average body burden in the US will be about 2 micromicrocuries of Sr<sup>90</sup> per gram of calcium, while the average worldwide concentration will reach about 1.3. Furthermore, according to an AP report of a press conference held in New York on Feb. 7, Kulp, Eckelmann, and Schulert estimate that, if tests continue at their present rate, the average worldwide concentration will be 4 to 8 micromicrocuries of Sr<sup>90</sup> per gram of calcium by 1970. Their upper figure would correspond to only 1/125th of the presently accepted MPC but would approach the level considered significant by the British Medical Council. Although the authors' present data indicate that it is unlikely for many people to exceed these averages by more than a factor of 10, the problem of such individual variation is so important that a detailed report on probable maximum concentration is in preparation.

## Millions or Billions for Civil Defense ?

Both the Congress and the Administration are seriously weighing proposals that would boost US civil defense efforts by at least an order of magnitude. These proposals would involve expenditures in the range of \$20 to \$40 billion, which contrasts sharply with the \$130 million requested by the President for CD in fiscal 1958 and the modest \$533 million 5-year program (without shelters) proposed by Civil Defense Administrator Val Peterson on Feb. 12 in a report to the Congress.

Rep. Chet Holifield (D, Cal.) has characterized Peterson's proposals as "too little and too late." Condemning what he called an "Alice in Wonderland" attitude toward the real possibility of atomic attack, he claimed that appropriate shelters could provide "80% protection" for the 100,000,000 persons who otherwise might be wiped out in a nuclear attack (N.Y. Times, Feb. 14). Holifield is chairman of the Subcommittee on Military Operations of the House Govt. Operations Committee, which held extensive CD hearings last spring and issued a detailed report on July 27 (see NLS 56-3 and 7). Hearings began Feb. 5 on a new bill (HR 2125), introduced on Jan. 5 by Holifield and 6 other Subcommittee members; it would implement CD planning in a new executive department with cabinet status. Speaking for the Administration, Assistant Budget Director Merriam revealed on Feb. 13 that the White House is considering a \$20 to \$40 billion shelter program but cannot go along with the notion of a new Cabinet post.

### Summary of HR 2125

Holifield's bill restates Congressional policy to affirm that civil defense is squarely a Federal responsibility. At the same time, the important supporting role of the States and local units of government is recognized, as well as the essentially non-military nature of civil defense.

The bill would establish a new executive department of the government, to be known as the Dept. of Civil Defense, headed by a Secretary, in place of the existing Federal Civil Defense Administration. The bill also provides for a Scientific Advisory Board of 12 members of outstanding scientific ability, selected by the President, and a CD Advisory Council of 15 members. This Council would give statutory representation to industry, labor, and the public, as well as State and local governments. To provide a 2-way channel of communications and cooperative working relationships with the military, the bill provides for a Military Liaison Committee representing the three military departments.

**NATIONAL PLAN** The bill would require the Secretary to prepare and execute a national plan of civil defense for the US. Fourteen broad objectives of the national plan are set forth in the bill, including such things as attack warnings, shelters, radiological monitoring, rescue and welfare services, and restoration of essential industry. The objectives are not narrowly conceived as temporary rescue services, but extend to placing the national economy back on its feet after an enemy attack. Among the specific functions entrusted to the Secretary, after consultation with the Secretary of Defense and appropriate State and local officials, are: definition of target areas, reduction of target vulnerability, group shelter construction, establishment of warning systems, equipment stockpiling, training and research, etc.

**EMERGENCY AUTHORITY** Title V of the bill carries a declaration of Congressional policy, making it clear that Congress intends to retain strong civilian direction of civil defense in any emergency. The possibility of martial law is recognized, but its use is to be limited and is to be resorted to only for urgent military requirements. During an emergency, which may be declared by the President or Congress, the Secretary is relieved from certain legal restrictions on procurement, employment of personnel, etc. Also the Secretary would be authorized to requisition supplies, to direct Federal, State and local civil defense operations, and if necessary to assume control and operation of any State and local government. However, the duly elected chief executive of the State or local government would decide when Federal intervention was necessary. The purpose of such emergency authority is to create a civilian substitute for martial law and military rule.

## CHICAGO GROUP STUDIES CIVIL DEFENSE

A realistic minimum civil defense program will cost about \$40 billion. This is the conclusion of a Civil Defense Study Group of the FAS Chicago Chapter (H. H. Hyman, D. R. Inglis, A. Langsdorf, J. Raz and G. R. Ringo). The summary of their report given below will be of particular interest to FAS members, who are currently being polled for their opinion on CD policy.

### Summary of Report

Effective civil defense is possible but requires a radically greater effort than the present. In our view, the chief steps needed are the following:

**DISPERSAL** Greater official encouragement of the program of dispersal of new industrial facilities. Roughly two-thirds of our present industrial capacity is contained in only 150 counties and 50% of new construction is concentrated in these same areas.

**STOCKPILING** (1) A food supply equal to 2 year's consumption of bare subsistence rations should be accumulated and stored outside likely target areas. A substantial fraction of this is available now in crop surpluses. Additional cost, about \$1.25 billion. (2) Medical supplies equal to 2 year's estimated needs following a nuclear attack should be accumulated. Cost, \$1 billion. (3) The present (\$5 billion) industrial stockpiling program should be tripled. Additional cost, \$10 billion. (4) Gasoline and fuel equal to  $\frac{1}{4}$  the present yearly consumption should be stored in dispersed locations. Cost, \$1 billion.

**SHELTERS** (1) Essentially every one in the US needs a fallout shelter. The government's obligation should be to state clearly what this should be and to furnish equipment, such as ventilators and radiation monitors, in sufficient quantities. Total cost, about \$3 billion. (2) In addition, deep shelters are needed for an estimated minimum of 20,000,000 people. This consists of people in secondary target areas and those in primary target areas who would have enough time to use a shelter but not enough time to be evacuated from the area. This figure is subject to great uncertainty at the present time. Rough estimate of cost, \$3 billion. (3) Deep shelters for industries and utilities equivalent to  $\frac{1}{3}$  of present US capacity. Cost, about \$20 billion.

This is an expensive program, but it averages only about 10% of the present defense budget per year if spread over a 10-year period. This is hardly cheap by any standards, but it seems to be the minimum needed to make conceivable the survival of a recognizable US in a major nuclear war. More important yet, it should contribute substantially to reducing the chances of such a war ever being fought.

The FAS is a national organization of scientists and engineers concerned with the impact of science on national and world affairs. The Newsletter is edited by members of the FAS Washington Chapter. Contributors to this issue were:

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## ACLU Recommendations

The American Civil Liberties Union (ACLU) has advanced a 13-point program for revision of the Federal loyalty-security program. The proposals, based on an extended analysis of court decisions and on the experience of government agencies, were made public in a letter from ACLU Director Malin to Attorney General Brownell on January 9.

Specifically, ACLU recommended that a security officer bringing charges against a government employee, probationer, or applicant be required to set forth his determination in a written, reasoned form, relating the evidence to specific criteria. This requirement, ACLU contends, would prevent the all-too-frequent abuse of the administrative process -- unreviewable and undisclosable decision-making, conceivably based more on personal bias than on the accumulation of evidence. Further, ACLU urged that all government agencies follow the lead of the Defense Dept. and set up an "intensive training and refresher program for all investigators, security officials, hearing officers," and others connected with loyalty or security programs.

To safeguard the rights of the employee and to minimize personal hardship, ACLU proposed that employees charged in a loyalty-security investigation: (a) be retained in their jobs or transferred to non-sensitive, comparable positions pending the outcome of the proceedings; (b) receive prompt hearings -- open or closed, at the option of the employee; (c) have the opportunity to confront and cross-examine witnesses, except for undercover agents; (d) have the opportunity to appeal decisions to an independent, centralized review board.

### IMMIGRATION CHANGES URGED

President Eisenhower sent Congress a new immigration message on Jan. 31, which said, in part: "One of the obstacles to travel, and a hindrance to the free exchange of ideas and commerce, is the requirement in the present law that every alien who applies for a visa or who comes to the US without a visa but remains for as much as 30 days, be fingerprinted. In some foreign countries, fingerprinting is regarded with disfavor. Lacking any significant contribution to our national safety and security, the law should be amended to eliminate the requirement of fingerprinting for aliens coming to the US for temporary periods." He further proposed doubling the annual flow of immigrants and elimination of current hardships on aliens merely in transit through the US.

**NEW BILLS** On Jan. 22, House Judiciary Committee Chairman Emanuel Celler (D, N.Y.) and 27 other House Democrats introduced a new bill (HR 3364) to replace the controversial McCarran-Walter Act. Rep. Walter, who heads Judiciary's Immigration Subcommittee, plans to hold hearings on the new

legislation. Except in 2 major respects, the new Celler bill is basically similar to the Lehman-Celler bill, which was introduced but never acted on in the 84th Congress. HR 3364 would place administrative responsibility for immigration and naturalization in a Bureau of Immigration and Citizenship within the Justice Dept. It would also distribute a total annual quota of 250,000 immigrants -- without regard to national origin, race, or any results of the US census -- among the following categories: (1) family unification, (2) occupational (those whose immigration would be advantageous to the US because of education or special skills), (3) refugee asylum, (4) national interest, (5) resettlement.

Unfortunately, this bill does not appear to diminish one of the major barriers to international scientific exchange, since it states: "Each alien who applies for a visa shall be registered and fingerprinted in connection with his application. . ." This requirement could be waived at the discretion of the Secretary of State only for certain categories of non-immigrants, primarily officials of foreign governments. Visiting scientists would apparently be subject to much the same processing, including fingerprinting, as before.

On Jan. 25, Ives of N.Y. and 4 other Republican Senators introduced S. 836, to amend the McCarran-Walter Act along the lines of the President's requests. It would provide a new annual total of 250,000 immigrants and end "procedural injustices," they said.

### HUNGARIAN SCIENTISTS SEEK PLACEMENT

By the end of 1956, over 1,000 Hungarian professional and technical workers had found refuge in the United States. Many more are still stranded in Austria and will arrive in this country as soon as the necessary Congressional action has been taken to increase our quotas.

The Nat. Research Council and the Nat. Academy of Sciences are conducting a program to aid Hungarian scientists, scholars, and engineers (see NL 57-1), and have asked for the cooperation of American scientists in finding positions for them. On Jan. 10, Detlev Bronk, Academy president, issued a statement to guide those interested in relocating such qualified refugees. Information is requested in duplicate and should include the name and location of institution, description of available position including date available and duration of employment, salary level, language requirements, availability of language training if needed, available housing, group willing to act as sponsor if known, and name, address, and telephone number for further negotiation. The original should be sent to:

Nat. Academy of Sciences-Nat. Research Council  
2101 Constitution Ave., N.W., Washington 25, D.C.

(Tel: Washington, D.C. - EXecutive 3-8100, ext. 226 or 266)

and a carbon copy to:

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c/o President's Committee, Bldg. 1305, Camp Kilmer, N.J.

(Tel: New Brunswick, N.J. - Charles 9-5883, ext. 22 or 23)

## **F A S NEWSLETTER**

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