PUBLIC SAFETY

A-Inspection Would Work

➤ DISARMAMENT inspection systems can be made workable.

This finding and the methods for making disarmament inspection work should strengthen the hand of U.S. scientists in Geneva who are trying to reach an agreement with their Russian counterparts on the possibilities of detecting violations of any future bans on atomic and hydrogen bomb tests.

More than 50 U.S. scientists and other specialists, working in this country and using only publicly available information, investigated possible methods of inspection and how these could be evaded. They concluded a workable system could be devised, reporting their findings in the book "Inspection for Disarmament."

The range of workable inspection methods extends from particular, limited objectives, such as halting nuclear bomb and missiles tests, to complete disarmament.

Six general methods for use by an international inspection force were evaluated. The techniques were called general because they are not specific to any particular weapon.

The six are:

1. Aerial inspection to check industrial and military installations and to detect the massing of large military forces.

2. Monitoring of governmental budgets to determine any diversion of large sums to secret uses.

3. A minimum network of seven ground stations within the U. S. and 25 in the Soviet Union, equipped with appropriate instruments for detecting acoustic and seismic waves, electromagnetic radiation and radioactivity, in order to catch tests of nuclear bombs with explosive power at least as great as a World War II block-buster bomb. Each station would be so located that no point within a country would be more than 300 miles from it. The same network could be used to control agreements on high altitude missile tests by adding appropriate radar equipment, and the stations could then serve as the nucleus of a system of air traffic control.

4. Radiation inspection through the medical control systems already in operation to protect personnel working in plants producing fissionable materials.

5. Concentration of scientific and technical personnel to locate clandestine production sites.

6. Inspection by individuals who would report infractions.

To check on the feasibility of these systems, three groups were established for devising strategic plans for evading possible disarmament agreements. These evasion teams found that successful clandestine production, under the eyes of an inspection organization, would be very difficult. They also concluded that evasion would become more difficult as international tensions were reduced and, therefore, urged early disarmament steps, even though partial.

The entire investigation was organized by Dr. Seymour Melman, associate professor of industrial and management engineering, Columbia University.

At Columbia, the research was conducted as part of the program of the Institute of War and Peace Studies under a grant from the Institute for International Order of New York, of which Earl D. Osborn is president. The book is published by Columbia University Press as a public service to make possible informed discussions on a vital public issue. (See p. 68.)

Science News Letter, August 2, 1958

PUBLIC SAFETY

Nuclear Test Policy

➤ THE UNITED States should lead the way to international control of nuclear test explosions, a National Planning Association committee has urged.

The committee said cessation of these tests will help lessen world tensions and war nerves and at the same time will transfer international competition to more peaceful and fruitful areas.

"We have full confidence," the group declared, ". . . that the resources of freedom —intellectual, political, ideological, human, and economic — can meet this (peaceful competitive) challenge."

Specifically, the NPA committee called for:

1. Immediate establishment of an international agency to operate a monitoring system for the maximum practicable control of nuclear explosions.

2. Proposal of an early date for a conference to reach international agreement on installation and proving of a monitoring system, development of nuclear "dynamite" for peaceful uses and for other purposes, and prohibition of nuclear explosions which could be identified by the monitoring system, except when such tests are authorized.

3. Delay of all nuclear explosions (after the current U. S. series) for two years while negotiating the two previous points.

Factors considered in arriving at its recommendations were summarized by the committee as human values, military security, security through arms control, and explosions for agreed purposes.

Notwithstanding the recent Geneva Conference between Western and Russian scientists on scientific means to monitor nuclear tests, which concentrated on detection of nuclear explosions, the NPA stated that it "does not believe that the matter of test detectability need any longer be a governing point."

Explosions, it pointed out, could be sufficiently detected in the following ways:

Low altitude tests could be detected by air sampling, fallout, electromagnetic, seismic shock, air blast, and other techniques.

High altitude tests, hundreds of miles up, probably could be detected by the electromagnetic radiation emitted.

Underground tests larger than five kilotons are detectable by stations strategically located.

Underwater explosions could probably be detected by seismographs on land and hydrophones on islands or ships spaced thousands of miles apart.

Experience from installing and testing the detection network would probably make smaller weapons detectable in the future.

In addition, the committee names other reasons for its advocation of nuclear control. One of them was that tests by Russia and, more particularly, other countries, are more likely to reduce U. S. security than U. S. tests are likely to improve it.

A second reason was that the U. S. now has adequate small bomb technology against massed conventional attack.

The National Planning Association, located in Washington, D. C., is an organization of business, labor, agricultural and professional leaders devoted to planning for the future of America.

Science News Letter, August 2, 1958

NAVIGATION

Small Boat Owners to Get Nautical Charts to Fit

➤ THE SMALL boat owner will soon stop wrestling with nautical charts bigger than his cabin.

Rear Adm. H. Arnold Karo, director of the Coast and Geodetic Survey, has announced that more than 7,000,000 owners of small craft will soon have a new series of nautical charts especially designed for cramped quarters. In addition, the series will be generously supplied with descriptive details heretofore found only in special publications. An experimental edition is already planned for the Potomac River area from Washington, D. C., to its mouth, about 95 miles distant.

Survey officials have not yet agreed upon optimum chart size, and are seeking advice from potential users. Current suggestions range from standard page size up to 17 by 26 inches, but the Bureau wants more information before making up its mind.

Other questions the Survey wants answered are:

1. What type of descriptive information should be included?

2. Should this be printed on the back or included separately?

3. Should charts be folded, in a portfolio, or in packet form?

All suggestions for the new series should be sent to the Director, Coast and Geodetic Survey, Washington 25, D. C.

Science News Letter, August 2, 1958