

taking positions out of caprice. Others are less charitable and damn him as a budget-chopper with little regard for the effects of his work. An attorney, Brown is the author of the legislation that established the Hoover commissions for reorganization of the executive and legislative branches. He also served on both commissions, experience that should be extremely valuable in the coming investigation.

The remaining members of the committee are three junior, relatively unknown, Republicans, all attorneys by profession: John B. Anderson, a second-term from Rockford, Illinois, and James C. Cleveland, of New London, New Hampshire, and Pat M. Martin, of Riverside, California, both freshmen. Martin, a member of the Public Works Committee select committee on federal research programs, is the only one of the four Republicans whose duties bring him into close contact with federally supported research.

The three junior Republicans are, of course, free to approach the inquiry in whatever manner they choose, but it is noteworthy that, in making its nominations for committee membership, the minority party provided very little counterweight for Brown. As an elder statesman of the House Republicans, he is in position to do a lot of good for his junior colleagues on the committee; and they are in position to do nothing but hope that he will regard them kindly. An elder's good will cannot bring about the millennium for a junior congressman, but it is worth a good deal on a variety of matters, ranging from choice office space to campaign assistance, from a helpful nod when a junket is sought to the success or failure means a great deal to the people back home. In brief, Brown is not the sort that a junior member would seek to cross, any more than a sane doctoral candidate would go out of his way to lock horns with the dean. And if Brown chooses to regard the investigation as a useful vehicle for reducing federal support for research, it is not likely that his junior party colleagues will go off on their own tack.

As for the five-man Democratic majority, its prospect for harmony recalls Will Rogers' comment: "I am not a member of an organized political party. I'm a Democrat."

Next week, we will examine the genesis of the investigation, the manner in which it will proceed, and what it is likely to produce.—D. S. GREENBERG

## United Nations: Space Committee Sees Test Ban, U.S.-Soviet Accord As New Footing for Negotiation

*United Nations, New York*—One sector of the cold war—space diplomacy—last week showed some signs of defrosting. The occasion for this unfamiliar amiability was a meeting of the United Nations Committee on Peaceful Uses of Outer Space, called to approve a report to be passed on to the 18th U.N. General Assembly, which convened this week. Evidence of a thaw, however, is so far a matter of mood rather than of action.

The friendlier climate in the space committee was obviously produced by two events involving the two great space powers, the United States and the Soviet Union: (i) the nuclear test ban treaty, and (ii) a bilateral agreement on cooperation in space, which last month was elaborated in a "detailed memorandum of understanding."

During the four sessions of the committee meeting, nearly every speaker, from East, West, and the neutralist middle, suggested that the test ban treaty and the American-Soviet agreement might augur a better bargaining atmosphere in forthcoming meetings of the space panel. The test ban, as a matter of fact, has kindled a certain generalized optimism at the U.N. about prospects for the current General Assembly session.

American and British officials have made it clear that the Western powers will use the session to determine whether Soviet expressions of good will over the test ban are translatable into a willingness to seek solutions, acceptable to both sides, of outstanding international problems. The State Department's Deputy Assistant Secretary for International Organizations, Richard N. Gardner, for instance, said in a speech in Boston last week that the U.S. viewed the sessions "as a testing ground of hopes and opportunities," but like U.S. officials at the U.N., he made no predictions about the probable outcome.

In the space committee itself, a representative group comprised of the delegates of 28 nations, the test ban is so popular that the members apparently were assuming that it is equally popular in the United States Senate, and the possibility that the United States might not ratify was never raised.

The tone of the space committee meeting was struck by the opening speeches of the American and Soviet delegates, but the key in the relatively harmonious meeting seems really to

have been set by an exchange of notes between the United States and the Soviet Union in advance of the meeting. And bilateral dealings between the space powers seem likely to determine the course of events in the space committee for the foreseeable future.

The space committee has two subcommittees, one dealing with scientific and technical matters, the other with legal problems. The scientific subcommittee made some modest progress last year and gained encouragement from the American-Soviet agreement on space cooperation. Meetings of the legal subcommittee, however, from the beginning served mainly to define the serious differences in this area between the United States and the Soviet Union [*Science* 140, 621 (10 May 1963)].

Since the legal subcommittee first got down to business in November 1962, the U.S. has taken the position that the space committee should try to reach agreement on practical and pressing problems on which there is a consensus within the committee. There appears to be a consensus on such matters as rescue of astronauts and the return of space vehicles to the launching nation and liability for accidents and damage involving space vehicles.

The Soviets, for their part, have insisted that general legal principles be developed before practical problems are taken up. The Soviet position in the legal subcommittee, in the view of American observers, has amounted to a bulky package deal. The Soviets declined to work on rescue and liability agreements until substantial progress was made on general principles. No work on establishing general principles could go forward until the form of the agreement was decided, and the Russians were apparently insisting that the form should be a treaty rather than a General Assembly resolution. No agreement was possible, the Russians further specified, except on certain terms which the Russians indicated were not negotiable. These terms included prohibitions against reconnaissance satellites, and against war propaganda in space.

The implications for arms control and disarmament in these conditions were obvious, and the prohibition against reconnaissance satellites appeared to be aimed directly at the United States, which has made no secret of its view that the development of a reconnaissance satellite system in space is a necessity for an "open" country like the United States on uneasy terms with a "closed" one like the Soviet Union.

As of last spring the possibilities of

compromise between the two space powers on a space code, therefore, seemed remote, and these circumstances were reflected in the report of the legal subcommittee which was before the space committee this week.

The scientific and technical subcommittee, on the other hand, last spring produced a series of recommendations, which, though limited in import, reflected activity already under way in several spheres of international space cooperation. An exchange of information on national space programs was initiated and apparently will be expanded. The subcommittee urged greater international efforts in satellite communications and meteorology, chiefly through the International Telecommunications Union and the World Meteorological Organization.

The group also recommended that a group of scientists drawn from states which belong to the space committee visit the site of the sounding-rocket launching station which the government of India is now building at Thumba, close to the geomagnetic equator. India has proposed that the Thumba launch site be sponsored by the U.N. as an international launching site. The visiting scientists would report back to the committee on how well the Thumba facilities meet the criteria, technical and otherwise, which the space committee set forth last spring. India has a cooperative agreement with the United States which will provide the basis for a number of experiments when the base becomes operational and, as a U.N.-sponsored, international launch site, other nations could enter into agreements with India to use the facilities.

The Indian delegate said that the Thumba facility should be ready for sodium-vapor and cloud experiments by the end of November and for magnetometer experiments and meteorological sounding-rocket experiments by the first of the year.

The report's final recommendation was a tactfully worded invitation to the full space committee to note "the urgency and the importance of the problems preventing potentially harmful interference with peaceful uses of outer space."

The Soviet delegates to the subcommittee meeting last spring bitterly attacked the United States for the Starfish series of high-altitude nuclear tests and also for Project West Ford, in which copper dipoles were injected into orbit, an action which the Soviets interpreted as a military communications experiment.

Despite this clash and the fact that the report of the legal subcommittee appeared to reflect a stalemate between the Americans and the Russians, the United States, on 26 July, sent the Soviets a series of outline statements on ways progress might be made on legal problems. The Soviet response was delivered at the U.N. a few hours before the full space committee meeting began last week, and although the contents of the notes have not been made public, their general nature can be surmised from the statements of Russian and American delegates at the meeting.

In his opening speech, United States representative Francis T. P. Plimpton praised the "practicality and limited nature" of the bilateral space agreement and the test ban treaty and urged the Soviets, "Let us look for specific subjects where practical agreements can be made to solve practical problems which would benefit all. We should move forward in the areas where substantive agreements exist, and not be stymied on all points by disagreements on some. Half a loaf is better than none at all. An agreement for some space cooperation is better than no agreement at all. Let us move forward on that basis and try to record and expand the areas of our agreement on outer space matters."

#### The Soviet Reaction

The Soviet reaction to the American "half-a-loaf" proposal seemed to be to open the door halfway. Soviet chief delegate Nikolai T. Fedorenko, in his opening remarks, advanced the possibilities of compromise in what one member of the American mission privately called "the most moderate statement any Russian has ever made" on the subject.

The chief Soviet shift in position was contained in Fedorenko's statement that his country had no objection to a proposal to establish working groups within the legal subcommittee to develop draft agreements on the rescue of astronauts and on liability for damages.

The Russians also suggested that they might not be unalterably opposed to space operations by private companies on condition that states assume responsibility for the actions of their citizens.

The remarks of the Russians were viewed as significant not only for what they said, but for what they didn't say. The test ban treaty removed the basis for accusations of harmful experiments in space through nuclear testing, and

Project West Ford was mentioned only in an indirect and forebearing way.

(Early this week, the Lincoln Laboratories reported that the band of 400 million inch-long copper wires inserted into polar orbit 3200 kilometers above the earth last May had no adverse effect on optical or radio astronomy. The Air Force is known to be interested in orbiting two bigger, semipermanent belts of dipoles ringing the equator and the poles to create a virtually jam-proof communications system. On form, the reaction of the Soviets and scientists from other nations to such a project would not be expected to be cordial.)

On Thursday, Academician A. A. Blagonravov, chief negotiator for the Soviets on the bilateral agreement for space cooperation, indicated that the Soviet Union would contribute to the program to collect information on national space programs. The program is not a pooling of research data, but rather the reporting, by nations, of which of their agencies are doing what sort of research. Up to now the Soviet Union has declined to participate. Blagonravov also called for a new U.N.-sponsored compendium on research in the burgeoning field of bioastronautics.

The business before the full space committee last week was to discuss the two subcommittee reports and to incorporate them in a report of its own to be sent to the General Assembly. This, with hardly a harsh word uttered, the committee did, noting "with gratification that, as a result of the work of its legal subcommittee and subsequent exchanges of views, there has been a narrowing of differences, which has been reflected in the Committee, and [expressing] the hope that a wider consensus may be achieved by the time this report is considered by the General Assembly during its eighteenth session."

It is expected that the United States and the Soviet Union will continue their consultations, probably privately, but what actions will follow the words—whether, for example, the Soviet Union will agree to proceed on the rescue and liability questions—is at this point far from clear.

In related post-test-ban developments it is equally difficult to confirm a trend. The memorandum of understanding on space cooperation between the Soviet Academy and the National Astronautics and Space Administration implements an agreement concluded in Geneva more than a year ago. The agreement calls for cooperation in three

(Continued on page 1208)



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Heron, American Soc. of Clinical Hypnosis, 800 Washington Ave., SE, Minneapolis 14, Minn.)

13. American College of Dentists, Atlantic City, N.J. (O. W. Brandhorst, 4236 Lindell Blvd., St. Louis, Mo.)

13-17. Neurosurgery, 10th Latin American conf., Buenos Aires, Argentina. (R. Morea, Callao 1685, Buenos Aires)

13-18. Society of Motion Picture and Television Engineers, Boston, Mass. (H. J. Hall, Itek Corp., Lexington, Mass.)

13-18. Plastic Surgery, 3rd intern. congr., Washington, D.C. (Capt. Joseph Connelly, Bethesda Naval Hospital, Bethesda 14, Md.)

14-16. Geological Sciences, intern. union, Rome, Italy. (T. Sorgenfrei, Trane-gaardsvej 20, Hellerup, Denmark)

14-16. Systems and Procedures Assoc. of America, intern., Milwaukee, Wis. (R. L. Irwin, 7890 Brookside Dr., Cleveland 38, Ohio)

14-18. Audio Engineering Soc., 15th, New York, N.Y. (J. Harvey, Harvey Associates, 580 Fifth Ave., New York 36)

14-17. Association of Official Agricultural Chemists, Washington, D.C. (L. G. Ensminger, AOAC, Box 540, Benjamin Franklin Station, Washington 44)

14-18. American Rocket Soc., 18th annual, New York, N.Y. (ARS, 500 Fifth Ave., New York 36)

14-19. Anatomical Pathology, 4th Latin American congr., San Salvador, El Salvador. (F. K. Mostofi, Armed Forces Inst. of Pathology, Washington 25)

15. Oak Ridge Inst. of Nuclear Studies, Oak Ridge, Tenn. (W. G. Pollard, ORINS, Oak Ridge)

15-16. Reactor Operations, symp., American Nuclear Soc., Ottawa, Ont., Canada. (ANS, 244 E. Ogden Ave., Hinsdale, Ill.)

15-17. Progress in Metallography, seminar, Leoben, Austria. (Eisenhütte Österreich, Eisenhütteninstitut, Montanistische Hochschule, Leoben)

15-18. American Dietetic Assoc., 46th annual, Philadelphia, Pa. (ADA, 620 N. Michigan Ave., Chicago 11, Ill.)

16-18. Ballistic Missile and Space Technology, San Diego, Calif. (C. T. Morrow, Aerospace Corp., P.O. Box 95085, Los Angeles, Calif.)

16-18. Calorimetry, 19th conf., Bartlesville, Okla. (G. T. Armstrong, Natl. Bureau of Standards, Washington, D.C.)

16-18. Gaseous Electronics, 16th annual conf., Pittsburgh, Pa. (G. J. Schulz, Westinghouse Research and Development Center, Pittsburgh 35)

16-18. American Vacuum Soc., 10th natl. symp., Boston, Mass. (AVS, Box 1282, Boston 4)

17-18. Industrial Hydraulics, natl. conf., Chicago, Ill. (E. Hansen, Illinois Inst. of Technology, Chicago 16)

17-18. American Soc. of Tool and Manufacturing Engineers, Pittsburgh, Pa. (H. E. Conrad, 10700 Puritan Ave., Detroit, Mich.)

17-19. Society of Photographic Scientists and Engineers, Washington, D.C. (E. Ostroff, SPSE, Box 1609, Main Post Office, Washington, D.C.)

17-20. British Medical Assoc., annual clinical meeting, Stoke on Trent, England. (D. Gullick, BMA, Tavistock Sq., London W.C.2, England)

## NEWS AND COMMENT

(Continued from page 1165)

areas: (i) the setting up of a coordinated weather satellite program; (ii) joint communications experiments with a passive reflector (an Echo satellite); (iii) joint contributions of satellite data to the World Magnetic Survey which will be conducted in 1965.

The August memorandum is regarded as significant by Washington observers because the Soviets followed through with dispatch and thoroughness in settling details and arrangements on equipment, communications links, exchanges of data, and so forth. There had been some who expected the Russians to drag their feet.

Another instance of Soviet-American scientific joint effort was announced earlier this month by the National Science Foundation, which said that the two nations will cooperate in Antarctica on a large-scale cosmic-ray investigation as part of the International Years of the Quiet Sun (IQSY) program. High steel antenna towers will be built at three United States bases and at a still undetermined number of Soviet bases. Other nations may cooperate in the project.

The U.S. and Russia are both signers of the Antarctic Treaty, which, in effect, makes the continent a demilitarized zone. The treaty includes a unique open inspection clause, and last week the United States announced it would exercise its option for the first time and send inspectors to the bases of six or seven countries, including the Soviet Union. The State Department said that the inspections were intended to establish a precedent. Between the lines it was not difficult to read a connection with the Senate debate on the test-ban treaty, where the possibilities of "cheating" have been given much attention. In a rather round-about way the inspections may be an attempt to lay groundwork for further moves in the field of arms control.

The U.N. Committee on the Peaceful Uses of Outer Space is worth watching for action on arms control and disarmament, if only because the members, particularly the smaller nations, are so apprehensive about the nonpeaceful uses of space. And it is not unlikely that, before too long, efforts will be made toward progress in arms control in space.

In general, however, it seems far too early to judge whether the current ice age of diplomacy is actually moderating.—JOHN WALSH