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REPRINT OF A U.S. STATEMENT ON VIETNAM

The following is the text of a statement made by Under Secretary Walter B. Smith of the United States at the concluding Indochina plenary session at Geneva on July 21, 1954.

As I stated on July 18, my Government is not prepared to join in a declaration by the Conference such as is submitted. However, the United States makes this unilateral declaration of its position in these matters:

DECLARATION

The Government of the United States being resolved to devote its efforts to the strengthening of peace in accordance with the principles and purposes of the United Nations takes note of the agreements concluded at Geneva on July 20 and 21, 1954 between (a) the Franco-Laotian Command and the Command of the Peoples Army of Viet-Nam; (b) the Royal Khmer Army Command and the Command of the Peoples Army of Viet-Nam; (c) Franco-Vietnamese Command and the Command of the Peoples Army of Viet-Nam and of paragraphs 1 to 12 inclusive of the declaration presented to the Geneva Conference on July 21, 1954 declares with regard to the aforesaid agreements and paragraphs that (i) it will refrain from the threat or the use of force to disturb them, in accordance with Article 2 (4) of the Charter of the United Nations dealing with the obligation of members to refrain in their international relations from the threat or use of force; and (ii) it would view any renewal of the aggression in violation of the aforesaid agreements with grave concern and as seriously threatening international peace and security.

In connection with the statement in the declaration concerning free elections in Viet-Nam my Government wishes to make clear its position which is has expressed in a declaration made in Washington on June 29, 1954, as follows:

In the case of nations now divided against their will, we shall continue to seek to achieve unity through free elections supervised by the United Nations to insure that they are conducted fairly.

With respect to the statement made by the representative of the State of Viet-Nam, the United States reiterates its traditional position that peoples are entitled to determine their own future and that it will not join in an agreement which would hinder this. Nothing in its declaration just made is intended to or does indicate any departure from this traditional position.

We share the hope that the agreements will permit Cambodia, Laos and Viet-Nam to play their part, in full independence and sovereignty, in the peaceful community of nations, and will enable the peoples of that area to determine their own future.

The article at the right is reprinted with the permission of Science magazine. It appeared in their September 17 issue.

Military Manned Flight Scheduled for 1968

President Johnson's recent announcement that in 1968 the Air Force will launch its first Manned Orbiting Laboratory (MOL) was a departure down an obscurely marked road. Five MOL flights are planned; a Titan II rocket will place in orbit a Gemini capsule attached to a 42-foot (13-m) long canister serving as a military laboratory for the two astronauts for up to 30 days; at the end of the mission, the astronauts will descend to earth in the capsule, leaving the canister in space. Some proponents of MOL believe that, as insurance against "technological surprise" and as a test of improved methods of intelligence gathering, the project will lead to greater stability in relations between the United States and the Communist world. But skeptics fear that MOL will carry the arms race into space. Despite a long hunger, the Air Force has never before been permitted a role in manned space flight, a function heretofore reserved exclusively for the National Aeronautics and Space Administration.

Approval of MOL is a heady success virtually certain to stir still grander Air Force ambitions. Air Force generals and aerospace industry officials have, for example, often talked of meneuverable spacecraft capable of inspecting potentially hostile enemy vehicles and, if necessary, destroying them; whether such an armed U.S. spacecraft ever materializes will depend upon a welter of influences and circumstances, including the political leverage of the Air Force and its allies, the state of the cold war, and how the Soviet Union —which has Air Force generals of its own—reacts to MOL. Although MOL will not be an operational weapon system but a laboratory intended chiefly to test man's endurance in space and his ability to play a useful intelligence-gathering role there, the remarks of the first Russian to comment on it were predictably unencouraging. "Now the Pentagon wants to use space laboratories not only for espionage but also to accomplish direct combat tasks," said Col. Gen. Vladimir Tolubko, Deputy Commander of the Soviet Union's rocket troops. He derided President Johnson for his "hypocritical" words about extending the rule of law to outer space, and even suggested that MOL would become a nuclear weapons carrier, although many defense scientists ridicule the notion of using highly vulnerable vehicles in fixed orbits as a nuclear delivery system.

But if the Soviets do suspect the MOL of offensive capabilities and move to counter it, an arms race in space will be the prospect. If, on the other hand, the Soviets respond by launching MOL's of their own, the Soviet Union and the United States might each feel more secure as the result of better knowledge of the other's military activities; this assumes, of course, that the manned spacecraft proves even more effective as an intelligence gatherer than the unmanned reconnaissance satellites now in use by both countries. Conceiveably, the MOL could contribute to further efforts at arms control, which has not advanced since 1963, the year of the "hot line," the partial test ban treaty, and the United Nations

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resolution against the orbiting of weapons of mass destruction. In any event, given the ambitionsness and technological strength of the Soviet space program, the possibility that the Russians would have launched a MOL, regardless of what the U.S. did, cannot be dismissed; and they may yet be the first to put a manned laboratory into orbit.

The Air Force's hopes for a manned space-flight role once rested largely on the Dyna-Soar, a space glider designed to maneuver to a landing upon re-entering the earth's atmosphere. In December 1963, Secretary of Defense Robert S. McNamara canceled Dyna-Soar, saying that what was needed was a program to determine man's utility in space rather than one limited to finding a way to control his return from space. At the same time, McNamara announced the program to develop MOL, which to more cynical observers suggested that MOL might be hush-money to stifle Air Force outcries over the loss of Dyna-Soar.

As it turned out, a firm decision to proceed with MOL was still nearly 2 years away, pending the completion of extensive studies and a review by the National Aeronautics and Space Council and by the President. MOL had to pass rigorous review from defense officials who wanted the project better defined in relation to military needs. Air Force rhetoric, warning of peril to the nation unless manned military spacecraft were developed, no longer sufficed; the generals faced the necessity of specifying tasks that man might perform and tests of his ability to do them.

The talents of industry and of defense scientists and engineers were enlisted, and as the MOL program finally emerged, great emphasis was placed on intelligence gathering. In fact, before MOL was approved, the Air Force, overlooking no arguments for the project, is understood to have assigned someone to work specifically on its arms-control potentialities.

The project advanced slowly, and by summer some congressmen were showing impatience. The House Subcommittee on Military Operations, chaired by Rep. Chet Holifield of California, indicated in a report in June that the Pentagon was off in its sense of timing. "The orbital space station was technologically right for development at least a year ago," the subcommittee said. It concluded that beyond doubt the MOL should be defense-oriented and run by the military rather than be entrusted to the civilian space agency, although there was no likelihood that NASA might take over the project.

The Soviet Union's military space program was "substantially ahead" of that of the United States, the subcommittee said, noting that the Voshkod launched in October 1964 carried three astronauts who were not confined to space suits and could conduct experiments in their shirtsleeves. "A decision for full-scale development of the military MOL does not mean that NASA is preempted from future space station experiments under its own management," the report added.

For their part, the space committees of the House and Senate also favored MOL, and their principle concern has been to see that maximum advantage is taken of what NASA as well as the Defense Department can contribute, and thus to avoid needless duplication of facilities and equipment. MOL seems to have stirred little apprehension of the sort expressed at a mid-1962 hearing by Sen. Robert Kerr of Oklahoma, who was chairman of the Senate Aeronautical and Space Sciences Committee until his death a short time later. Kerr suggested that the Defense Department's policy of developing technological "building blocks" against the day when the new military space systems might be needed could lead to wholesale encroachments on NASA's preserves. His committee's legislative jurisdiction extended only to NASA; for him to express such concerns was not surprising.

When MOL was taken up by the National Aeronautics and Space Council in July, its approval already was virtually assured. It had the support of Administrator James E. Webb of NASA, as well as that of Secretary McNamara. Although managed by Defense, MOL would make use of NASA's Gemini spacecraft and perhaps of a modified Apollo life-support system for the laboratory; moreover, some scientific experiments were to be conducted for NASA.

In March, in one of his first speeches as chairman of the Space Council, Vice President Hubert H. Humphrey had indicated his support of the MOL. "We are a peace-loving people, but we would ignore the real interests of the free world if we diminished our military efforts in space," he said. "That is why, even today, four great companies in the United States are competing in the design for a manned orbiting laboratory."

Humphrey, long associated with arms-control causes, was careful to look at MOL from the standpoint of the United States commitment to the peaceful use of outer space. The members of the Council, which in addition to its chairman is made up of the heads of NASA, the Defense Department, the Atomic Energy Commission, and the State Department, were asked to provide the answers to 21 questions; at least some of these questions were concerned with the broad political implications of MOL overseas and were considered by specialists in the State Department and the Arms Control and Disarmament Agency.

Some NASA tracking stations are located in neutral countries, but MOL will rely on Defense Department facilities and thus is not expected to compromise NASA's reputation for openly conducted space exploration for scientific rather than military purposes. It seems unavoidable, however, that by undertaking the highly secret MOL program the United States will arouse fears abroad that it has pushed the arms race into space; the initial reaction in the foreign press already indicates as much. The Space Council had, in fact, to consider whether MOL promised enough advantages to make it worthwhile to establish the precedent of sending a manned military system into space.

Just how these questions were weighed and decided has not been revealed; but it is obvious the Council believed the MOL would demonstrate that a manned satellite is a more efficient intelligence gatherer than even the highly successful unmanned satellite Samos, which already has lifted somewhat the veil of morbid secrecy drawn over the Soviet Union's closed society. Samos, which officially doesn't exist, has taken thousands of pictures and shown that effective photo-reconnaissance need not depend upon vulnerable U-2 spy planes. Samos cannot exercise the selectivity that a trained human observer might, however.

The five MOL flights not only will test man's efficiency as a reconnaissance observer, but will try his tolerance for the prolonged space flights probably necessary if MOL is to advance economically from an experimental to an operational system. The MOL astronauts must be fit to perform many duties, which will include repairing equipment, assembling a large antenna, and investigating natural phenomena of mili-

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OF INTEREST . . .

JOHN S. FOSTER, recently named Director of Defense Research and Engineering in the Pentagon and former head of the Lawrence Radiation Laboratory at Livermore, California, has been calld a "hawk" in the scientific community, according to the *Washington Post.* He was a "highly negative" witness in 1963 when the ratification of the Test Ban Treaty was under consideration. Foster himself says that he would like to take some of the "curse off the atom" by using atomic explosives to dig canals, cut through mountains, and blast out harbors. He said, "It's exciting to think of changing the face of the world in our lifetime." *(Washington Post, 14 Sept. 1965)*

MILITARY PERSONNEL in Vietnam indicated that they wanted the battlefield ban on non-lethal gas re-examined in late September. The Pentagon replied that there has been no change in policy with regard to the use of non-lethal gas in the field—it is still up to the discretion of the commander on the scene, Gen. Wm. C. Westmoreland. *(The Baltimore Sun, 23 Sept. 1965)*

FOUR U.S. DAILY newspapers started weekly science pages in 1964, bringing to 11 the number of dailies with science pages or half-pages. *(Understanding, published by the Council for the Advancement of Science Writing, Spring 1965)*

THE JAPANESE MINISTRY of Education has reported that schoolchildren are growing too large for their desks. The average height of Japanese 14-year-olds has increased 4½ inches in the past 13 years. *(N.Y. Times, 10 Sept. 1965)*

THE AMERICAN CHEMICAL Society has announced that Wallace R. Brode, former science advisor to the U.S. Department of State, will head the A.C.S. office of International Activities. The office is newly created, and will maintain liaison with chemical societies in other countries, units of the U.S. government, and other groups, such as UNESCO. *(A.C.S. release, July 1965)*

THE UNITED NATIONS World Population conference held in Belgrade, Yugoslavia, during the first week of September, was the occasion for the reading of more than 500 papers prepared by demographers, scientists, and scholars from many parts of the world. Seventy nations were represented. A notable exception was mainland China, since it does not participate in U.N. sponsored programs. Only 4 of the 500 papers referred specifically to the population problem that China faces. *(N.Y. Times, 5 and 6 Sept. 1965)*

THE ATOMIC ENERGY COMMISSION announced on October 1 proposed arrangements by which privately owned uranium will be enriched in Government facilities for use as atomic fuel, beginning in 1969. Enrichment increases the proportion of fissionable or chain-reacting uranium material in the fuel.

Amendments last year to the Atomic Energy Act authorized such service. Previously all enriched uranium fuel was owned by the Government.

The AEC published for public comment a proposal that enrichment contracts with private industries be for periods up to 30 years, be based on a specified fee schedule with a ceiling charge of $30 per kilogram of separative work and exclude uranium ore of foreign origin if it is to be used for fuel in a domestic atomic power plant. *(The Baltimore Sun, 2 October 1965)*

NSF, HEW ESTABLISH FELLOWSHIP REVIEW PANELS

The National Science Foundation and the Department of Health, Education, and Welfare announced jointly the establishment of Fellowship Review Panels and the appointment of panel members, to review loyalty and moral offense cases.

Purpose of the panels is to provide a fair and impartial hearing in the event that substantial questions arise about the moral character or loyalty of a Federal fellowship holder or applicant. Statutory requirements and regulations provide for the termination or denial of a fellowship on such grounds when the award is determined not to be in the best interests of the United States.

Procedural safeguards specified in the regulations of both agencies provide the individual concerned with the opportunity:

—To have a hearing before a fellowship is refused or terminated on such grounds,
—To be represented by counsel at the hearing,
—To appear in person,
—To present witnesses,
—To cross-examine persons,
—To decide whether the hearing should be open or closed to the public.

The panel and hearing procedures would apply to fellowship holders under all NSF and HEW programs. They would also apply to applicants for fellowships under the National Science Foundation Act, the National Defense Education Act, and some other HEW programs, depending on the requirements applicable to a particular program.

Members of the Fellowship Review Panels will serve on both the NSF and HEW panels.

Michael H. Cardozo, executive director of the Association of American Law Schools, Washington, D. C., has been named Chairman of the Fellowship Review Panels.

FOOD FROM COAL

The Department of the Interior Bureau of Mines has reported that coal reserves may provide a future source of high-protein, high vitamin food to help satisfy urgent nutritional needs of the world's rapidly growing population. The Bureau reported that its research in coal microbiology has singled out a few yeasts which thrive on certain chemicals obtained from coal tar. Although the Federal Agency's work on coal-chemicals aims primarily at finding better ways to use coal as a fuel, investigators became interested in food-from-coal experiments because of the similarity between coal-chemicals and several petroleum-derived chemicals which science has already proved capable of supporting growth of protein-making microbes.

Several of the microbes that can live on coal-chemicals produce protein 2,500 times faster than domestic meat animals. For example, one 1100 pound cow, grazing in a pasture, turns its food (grass) into edible protein at the rate of 1.1 pound per day. But 1100 pounds of microorganisms, living on a "pasture" of coal-derived chemicals, turns its food (paraffinic hydrocarbons) into edible protein at the rate of 2,750 pounds per day. The Bureau of Mines speculated that the material synthesized from coal by microbes could be added to conventional foods as a protein supplement, or it might help meet human nutritional needs indirectly as a rich feed for livestock such as cattle, hogs, and poultry.

The food itself is a dry, whitish, flour-like substance which is nearly tasteless.

Coal resources, however, are expected to be exhausted in one thousand years if used at the present rate for fuel only. *(Department of Interior release, 16 Sept. 1965)*

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tary interest, as well as conducting experiments in photo-reconnaissance.

There is hope, at least, that by indicating the futility of trying to avoid surveillance, MOL (or successor systems) will encourage Soviet acceptance of such arms-control proposals as those currently offered by the United States at Geneva. The U.S. has urged, for example, that the Atlantic alliance and the Soviet bloc explore the possibility of a "verified freeze" on the number and characteristics of strategic nuclear offensive and defensive weapons.

It is argued that such a freeze would impose inspection requirements fare less intrusive than those necessary for general disarmament. Even so, it would involve continuing inspections of declared weapons plants and a certain number of other inspections as a safeguard against cheating. From the view of the Soviets, with their aversion to inspection, the U.S. proposal must seem very intrusive indeed. But if they should know, several years hence, that satellite-borne U.S. observers are gathering a mass of data on the Soviet economy and weapons potential, then the American proposals now tabled at Geneva perhaps will appear less radical.

Should the Soviets perfect their own MOL's, as expected, a situation might develop roughly analogous to that which preceded the partial test ban treaty, when both sides had learned long-range test detection techniques. Each given highly effective orbiting reconnaissance teams, the United States and the Soviet Union might temper their distrust—which appears to be mutual, despite the relative openness of U.S. defense activities—with the knowledge that to some extent arms control treaties have become self-enforcing.

Whether MOL will be more a stabilizer or a spur to the arms race depends partly on what happens here at home. There is some fear, now that the Air Force has its foot in the door, that it will demand—and get—a larger and larger part in the national manned space flight program. Such concern does not appear widespread, however, and perhaps for good reason, although the capabilities that the Air Force develops through MOL will have to be taken into account whenever new space programs are considered.

The National Aeronautics and Space Act of 1958 gave to NASA the responsibility for all space activities except those "peculiar to or primarily associated with the development of weapons systems, military operations, or the defense of the United States (including the research and development necessary . . . for the defense of the United States)." The line of demarcation thus drawn between the civilian and military space programs is somewhat indistinct, but Defense Secretary McNamara and his associates have argued that they have tried to observe it without taking chances with the national security.

In the name of defense, ambitious navigation, communication, weather, ballistic-missile early warning, and reconnaissance satellite programs have been undertaken. Defense officials have indicated that the reason manned military space flight is so long in coming has been the absence of realistic proposals. The total military space program is not small, the budget having run to more than $1.5 billion for each of the past three fiscal years and to $1.7 billion for the current year (including $150 million for MOL, which ultimately is to cost about $1.5 billion or more). The Defense Department gets nearly a fourth of the total space budget.

Much of the spending has not been against known military requirements, but for the development of a broad base of technology as insurance against an uncertain future. For example, development of the Titan III, which as the Air Force's workhorse booster will put MOL into orbit, was begun several years ago even though there was no specific mission for it. Nevertheless, in nearly all cases space systems have not been approved for operational use or deployment unless a military requirement has existed. "This is not the Department of Space," a Defense official reminded an aerospace group a few years ago.

Civilian control of the military space program also can be exercised at higher levels in the administrative structure. Vice President Humphrey, as chairman of the Space Council and at least nominally an important adviser to the President on space matters, is not likely to take a romantic view of Air Force space proposals. Though they favor MOL, the space committees of the Congress, if only out of jurisdictional jealousy, may buck against expansions of the military space program at NASA's expense; some members of the House committee already are watchful for any such tendency. (In this regard, however, the large overlap in membership of the Senate space and armed services committees should be noted.)

The Air Force has allies in the aerospace industry, the trade press, and the Air Force Association who strive to keep before the public visions of outerspace combat. Some members of Congress, including Barry Goldwater, when he was there, have tried to keep these same visions alive, but without much success. A turn for the worse in East-West relations, or a series of Soviet space spectaculars, could make for a more propitious atmosphere in which to propagate fears of eerie celestial conflict, however.

All predictions of what may come in the wake of the MOL program probably are premature. All one can do is to regard it as an important precedent and to hope that from it will flow more good than ill.—Luther J. Carter.

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