

~~TOP SECRET~~

IMPACT OF RECENT PUBLICITY ON THE
MANNED ORBITING LABORATORY
PROGRAM

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Page 1 of 1 Pages.

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SUMMARY

On 3 December 1960 the Department of Defense placed a stop order on SAMOS publicity. This directive was broadened on 24 July 1961. The press reaction to these actions was minuscule until 1962 when a series of articles appeared in reputable media at a steady rate. These articles were technical in nature, drawing heavily on previously released data and speculating on the current status of the program. By 1963, the articles were infrequent and generally more erroneous than factual. Technical editors began to lose their original fascination with "spy-in-the-sky" stories. The public has accepted DOD silence on its satellite reconnaissance program.

On 23 March 1962 the Department of Defense issued DOD Directive 5200.13 which placed all military satellite programs under a special "look-alike" security system. This directive was opposed by the aerospace industries, the press, the services, and the Congress. Heavy resistance from the press peaked about May 1962 and then subsided; service resistance peaked in Autumn 1962 and then disappeared; Congressional opposition emerged in two surges -- one in May/June 1962 and the second a year later. By the end of 1962, the 5200.13 security system was solidly in effect and working well. Press speculation on individual programs dwindled to one or two paragraph stereotypes.

On 25 August 1965 the President announced the Manned Orbiting Laboratory program. Since that date a number of articles have been published on the program. These are rather heterogeneous in make-up; some speculate on the MOL military mission; some decry the end of "peaceful space;" some discuss international implications; others are concerned over censorship, NASA, the USSR, etc. A plot of number of articles versus time since announcement shows a definite tapering-off in the rate at which articles are being written.

In general, one can say that the DOD's experiences with public reaction to security systems were most difficult in the case of 5200.13, less difficult in the case of SAMOS, and smoothest with MOL. Articles on MOL have been forceful but not abusive. Aerospace industries have not attacked MOL security. The Congress has been most cooperative,

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especially as compared to its original reactions to DOD Directive 5200.13. For the future, one would predict decreased public interest in MOL and a reasonably calm and tolerant journalistic environment until launching time, when a sudden surge of interest can be expected.

Three analyses are attached -- one on each of the security situations mentioned above. Typical press stories accompany each analysis.

MOL	Tabs 1-29
DOD Directive S-5200.13	Tabs 30-37
SAMOS	Tabs 38-48

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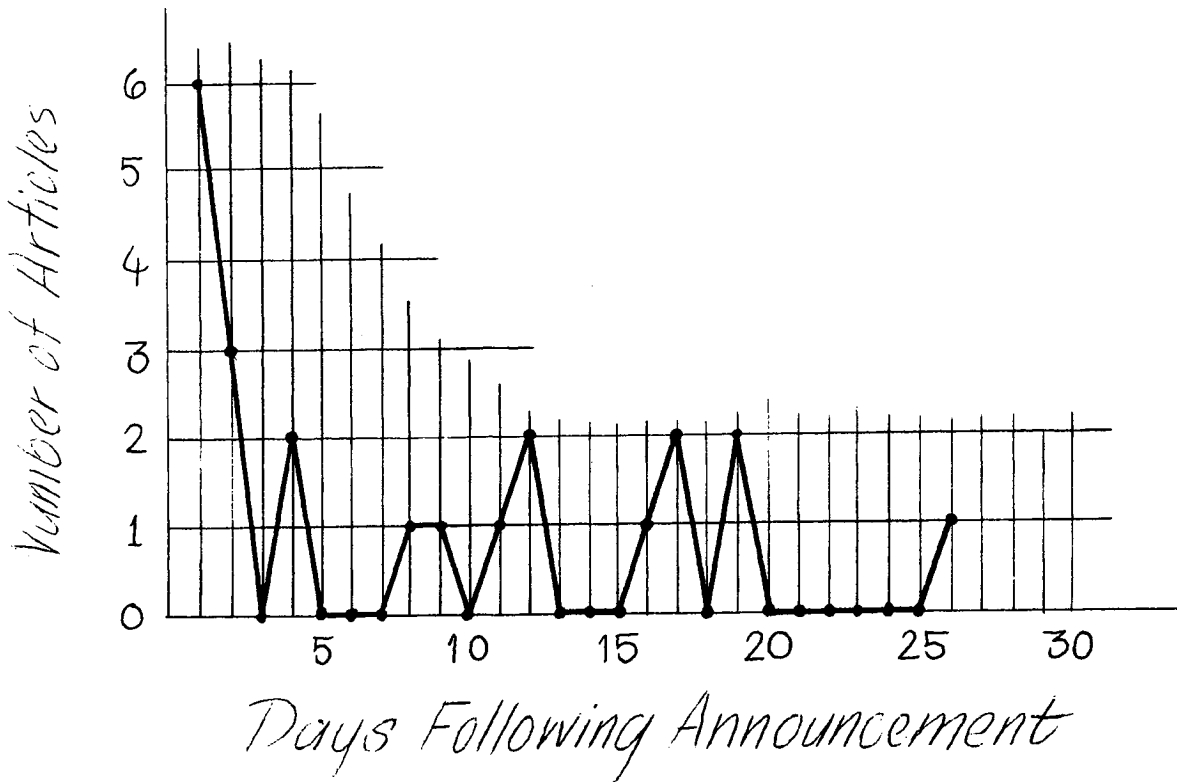
NO OF ARTICLES BY DATE -MOL

August

September

			25 <i>Announcement</i>	26	27	28
				6	3	0
29	30	31				
2	0	0				

			1	2	3	4
			0	1	1	0
5	6	7	8	9	10	11
1	2	0	0	0	1	2
12	13	14	15	16	17	18
0	2	0	0	0	0	0
19	20					
0	1					



ANALYSIS OF PRESS ARTICLES ON THE
MANNED ORBITING LABORATORY
25 August - 20 September 1965

A total of 22 daily newspapers and magazine articles covering the 26-day period following 25 August (the date of MOL announcement) was sampled. Several issues stand out in the analysis:

1. The claim of a significant change (reversal) in national "peaceful space" policy represented in the MOL decision. (Tabs 4, 12, 13, 20, 24, 25, 27)

2. Emphasis on a "peaceful effort" - U. S. wary about destroying the image of a peaceful U. S. manned space flight program -- play down military implication. (Tabs 3, 4, 5, 6, 7, 13, 20, 23, 25)

3. Super-secret (hush-hush) (veil of secrecy) treatment of MOL likely -- secrecy has already subtly begun. (Tabs 4, 5, 9, 11, 14, 17, 18, 20)

4. The primary purpose of MOL will be reconnaissance -- MOL represents a giant step in satellite reconnaissance capability -- MOL will stand or fall on photo and electronic reconnaissance ability. (Tabs 3, 4, 7, 8, 10, 12, 13, 15, 17, 18, 19, 20, 24, 27, 28, 29)

5. MOL has caused disquiet across the world at a time of hope for progress in disarmament -- MOL likely to increase tensions between U. S. and USSR and directly extend arms race into outer space. (Tabs 13, 17, 18, 24, 25, 27, 28)

6. Both U. S. and USSR known to be conducting military photo reconnaissance with unmanned satellites -- results are described as striking and enormous. (Tabs 7, 8, 13, 17, 18, 19, 20, 24, 27, 28)

The "prompt application of censorship and news management by DOD" was treated only once in the articles reviewed. However, NASA was also considered a "traducer of free news flow" giving news management the "old college try" everytime a manned spacecraft goes up. (Tab 14)

In several instances speculation on the delay in the MOL decision appeared -- charged first to State in sounding out U. S. Allies, then to "large and powerful segments of the Administration" brought to unanimity by the arms control possibility, and finally to an Air Force/CIA battle over mission control. (Tabs 13, 18, 29)

SAMOS (and speculation on its results) was backgrounded in better than half of the sample. (Tabs 7, 8, 13, 17, 18, 19, 20, 24, 27, 28, 29)

Of interest, the first Soviet response did not appear until 10 September (16 days after announcement) -- in the form of an allegation by Colonel Gen. Tolubko that the "U. S. was developing a manned orbital space laboratory to be able to bombard the earth with nuclear bombs." (Tab 23)

The question of "why wasn't NASA, with its extensive experience in space, given the MOL assignment?" was raised and discussed several

PRESIDENT JOHNSON'S STATEMENT ON MOL - PRESS CONFERENCE - 25 August 1965

Good morning, ladies and gentlemen.

At the suggestion of Vice President Humphrey and members of the Space Council, as well as Defense Secretary McNamara, I am today instructing the Department of Defense to immediately proceed with the development of a Manned Orbiting Laboratory.

This program will bring us new knowledge about what man is able to do in space. It will enable us to relate that ability to the defense of America. It will develop technology and equipment which will help advance manned and unmanned space flights. And it will make it possible to perform their new and rewarding experiments with that technology and equipment.

The cost of developing the Manned Orbiting Laboratory will be One Billion, 500 Million Dollars.

Unmanned flights to test launchings, recovery and other basic parts of the system will begin late next year or early in 1967. The initial unmanned launch of a fully equipped laboratory is scheduled for 1968. This will be followed later that year by the first of five flights with a two-man crew.

The Air Force has selected the Douglas Aircraft Company to design and to build a spacecraft in which the crew of the laboratory will live and operate. The General Electric Company will plan and develop the space experiments. The Titan IIIC booster will launch the laboratory into space and a modified version of the NASA Gemini capsule will be the vehicle in which the astronauts return to earth.



NEWS RELEASE

OFFICE OF ASSISTANT SECRETARY OF DEFENSE (PUBLIC AFFAIRS)

WASHINGTON, D.C. 20301

PLEASE REDE DATE

IMMEDIATE RELEASE

August 25, 1965

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PRESIDENT APPROVES DOD DEVELOPMENT OF MANNED ORBITING LABORATORY

The President announced today at the White House that he has approved the Department of Defense proceeding with the development of a Manned Orbiting Laboratory (MOL) at a cost of \$1.5 billion.

Secretary of Defense Robert S. McNamara recommended the action to the President after discussions with the Vice President and members of the Space Council.

The Air Force has selected the Douglas Aircraft Company to design and build the spacecraft in which the men will live and operate. It has chosen General Electric Company to plan and develop the space experiments.

The TITAN IIIC booster will launch the laboratory into space and a modified version of the NASA GEMINI capsule will be the vehicle in which the astronauts return to earth.

The primary objectives of the MOL program are to:

- (a) learn more about what man is able to do in space and how that ability can be used for military purposes.
- (b) develop technology and equipment which will help advance manned and unmanned space flight.
- (c) experiment with this technology and equipment.

Unmanned flights to test launching, recovery and other basic parts of the system are due to begin late next year or early 1967. The initial unmanned launch of a fully-equipped MOL is scheduled for 1968. This will be followed later that year by the first of 5 flights with two-man crews.

Astronaut candidates will be military test pilots and graduates of the Aerospace Research Pilot School at Edwards Air Force Base, California.

On the basis of Department of Defense-NASA studies, the National Aeronautics and Space Administration will decide which of its scientific or technological experiments are carried out in the MOL. These will not interfere with DoD experiments.

MORE

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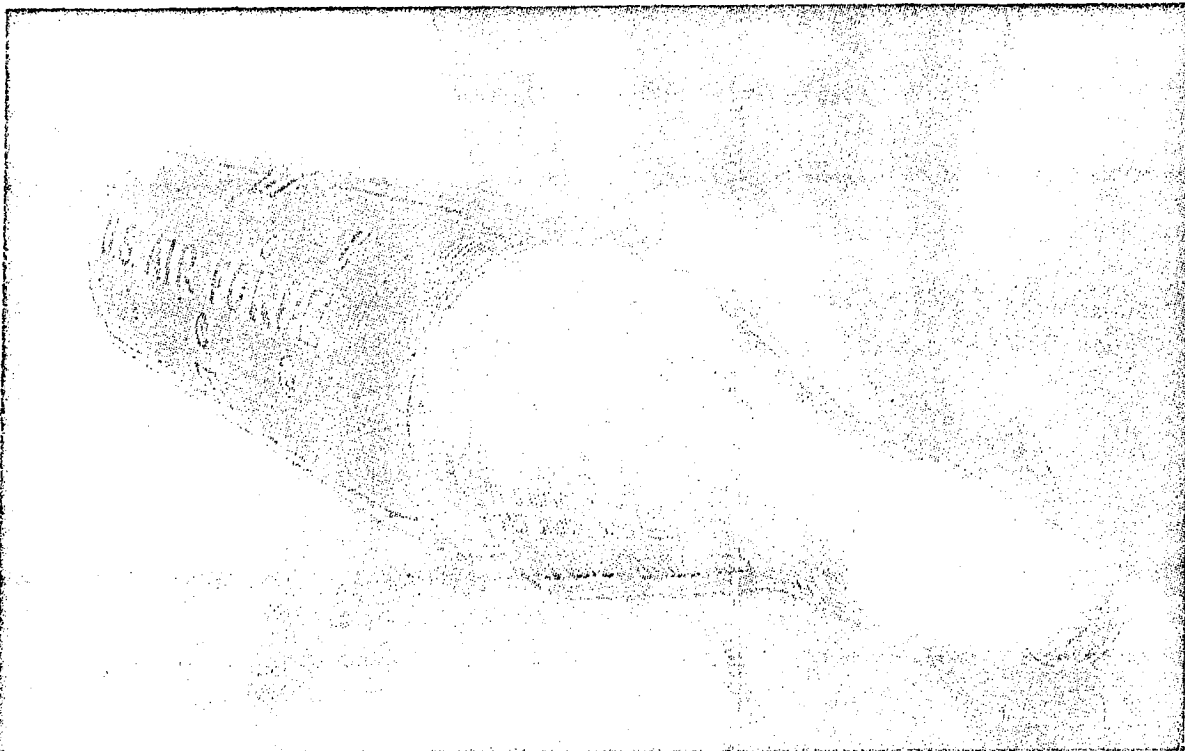
The MOL project was begun in December 1963 when the DYNASOAR, a project dating from the 1950's, was cancelled. At that time it was decided that DoD's manned space efforts should be concentrated on finding what man can do in space and getting the equipment to help him do it.

The MOL program to date has cost \$30 million. Another \$150 million is in the FY 1966 budget.

E N D

THE WASHINGTON POST
26 August 1965

Manned Lab in Space Gets Johnson Go-Ahead



This drawing by an Air Force artist shows how the crew of the proposed Manned Orbiting Laboratory (MOL) would prepare to return to earth after completing its mission. In the sketch the Gemini capsule, at right, with astronauts inside, is separating from the

42-foot-long MOL. The Gemini return capsule and the laboratory would be joined when put into orbit by an Air Force Titan booster, with the astronauts riding in the return vehicle. In orbit the astronauts would move into the MOL for their work. Story on Page A9.

THE WASHINGTON POST

Lab May Test Need of Aerospace Force

By John G. Norris

Washington Post Staff Writer

AS approved yesterday, the Air Force's long-sought manned orbiting laboratory (MOL) project has limited immediate aims. But one significant provision is that the spacecraft will be launched from the Nation's space centers in both California and Florida.

Outlook for Air Force

Until now, all National Aeronautics and Space Administration manned flights have been launched from Cape Kennedy, Fla., which restricts astronauts to orbits that cross only parts of Russia. From Vandenberg Air Force Base, Calif., satellites can be put into polar orbits without fear of dropping boosters on populated areas.

This means that by 1968-69, the United States can launch

manned as well as unmanned observation satellites that cover the entire globe, including Russia.

Still more important is the fact that the Air Force will get its chance to demonstrate the need for a manned military aerospace force. USAF chiefs long have been intuitively convinced that space is merely an extension of the earth's atmosphere and that they must be prepared to defend it. But they have been like the military air pioneers of 50 years ago, who could not even predict, much less prove, what air power might become.

What can manned Air Force orbital flights do that instrumented unmanned military or manned NASA satellites cannot do? Lack of hard answers to this question has heretofore blocked Air Force manned space proposals.

Another argument against

the Air Force position has been that the United States is pledged to peaceful purposes in space. The military's answer is that preparation of defenses against armed aggression is a peaceful aim.

Differing Opinions

Many scientists believe that unmanned satellites with sensors can perform most of the defensive roles in space, such as interception and identification of hostile satellites or policing atomic test ban violations. But military men contend that manned observers can do a better and surer job. And men can monitor and repair faulty equipment, they note, as the Gemini 5 flight has shown.

Men in a military satellite can detect the launching of enemy missiles better than other means can, it is argued. And they could act as "for-

ward air controllers" for U.S. earth-launched missiles, reporting back whether they hit the target somewhat as pilots in spotter planes do in Vietnam.

U.S. Air Force leaders agree with American scientists that satellite-borne nuclear bombs, such as Soviet chiefs now boast of, would be less accurate and efficient than ground-launched ICBMs. But there always remains the possibility of a technological breakthrough involving something like space-launched laser-type beams that could only be countered by defensive manned spaceships.

Plans for Astronauts

And manned satellites greatly interest the Navy as a more promising way of countering the Russian submarine threat and keeping track of warships and

merchant vessels all over the globe.

Manned NASA satellites could perform many of these functions as well as Air Force spacecraft, it is argued. But a high Pentagon official noted yesterday that Gemini astronauts are cramped within the 13-foot-long capsule and must wear pressure suits. Air Force astronauts must ride into orbit in a Gemini mounted atop the 10-foot-diameter, 42-foot-long MOL.

Within the MOL, astronauts would doff their pressure suits and work in their shirt sleeves. It is planned that they remain in orbit for periods of up to a month, and return to earth in the attached Gemini, leaving behind the MOL to continue in orbit or eventually burn up descending into the atmosphere.

The \$1.5-billion MOL program as now approved lacks many projects necessary to the development of a manned aerospace force. There is no provision for a second pair of astronauts to rendezvous in space with those already in orbit, and only limited maneuverability will be built into the Gemini-MOL satellite. But it would be possible to add this later.

In the long run, many other things would be needed for a true aerospace force, notably spacecraft that could return to earth like an airplane, land on an airfield and take off again for space. But yesterday's decision to start was a milestone in space.

The Washington Post

26 August 1965

THE WASHINGTON POST
26 August 1965

Significant Policy Shift

Orbiting Lab to Settle Question Of AF's Manned Role in Space

By Howard Simons

Washington Post Staff Writer

The Administration's action yesterday on a manned orbiting laboratory is a \$1.5-billion experiment to answer a question ducked by two previous Administrations.

The decision on the manned orbiting laboratory (MOL) represents a significant change in national policy. Hitherto, Presidents Eisenhower and Kennedy virtually ignored Air Force arguments that it had a manned role in space.

Unsympathetic Ears

The notion that the military must occupy the high ground always fell on unsympathetic ears in the Pentagon proper and in the White House.

Rather, the Nation—as a matter of policy—has concentrated its time, talent and money on a civilian manned space effort.

Now the President has sown the seed for a separate, but not yet quite equal, military manned space effort.

One-Shot Affair

Significantly, MOL is a one-shot affair. The President has not committed the Nation to a long-term Air Force manned space flight effort. But what he has done is protect himself politically against potential political repercussions should the Russians send a six- to eight-man orbiting space station aloft, as they now appear to have the wherewithal to do.

Without some active Pentagon role in manned space

News Analysis

flight, the President would be vulnerable to the charge that while the Nation concentrated on the moon, the Russians have brought about a Cuba in space.

Now he can mitigate such charges by pointing to the Air Force MOL. Nonetheless, the MOL, per se, is a carefully considered effort to determine what, if any, activities have a strictly military requirement in space. But larger decisions still must come.

One of these involves a national orbiting space station. This station would carry six to ten men around the earth for months and perhaps years. The station would be resupplied with men and materials by an earth-to-station ferry service. Cost would be \$10 billion to \$20 billion.

NASA or Air Force

The decision facing President Johnson or another President in the future is who will manage and use such a station—the Air Force or NASA.

By giving MOL to the Air Force, the President is giving them experience to compete for management of such a station.

At the same time, he is generating competition between the two agencies.

NASA, it should be noted,

has a program to study the matter of a national orbiting space station, just as does the Defense Department.

Another decision will have to come in the early 1970s. This one will be on whether the Air Force has proved its long-held point that it has a role in manned space flight well enough for a President to extend their lease on it.

Emphasis on Peace Effort

Meanwhile the Administration is very wary about destroying the image of a peaceful American manned space flight program, which it has so carefully and lovingly constructed. Under no circumstances will the Air Force be permitted to carry weapons, or even remote parts of a weapons system, aloft. Nonetheless, the Administration will have to walk a tightrope in the light of world propaganda.

The simple fact that orbiting astronauts Gordon Cooper and Charles Conrad are conducting Defense Department experiments with potential military application has created a dilemma for the civilian space agency. In some quarters the experiments are being labelled as compromises of what had been a peaceful program, though no such hallabaloo surrounded NASA's use of modified Atlas and Titan ballistic missiles to launch its astronauts into space—astronauts who are also military men.

Finally, an argument can be made that NASA's policy of open publicity and no secrets—the display of difficulties as well as successes on television, for example—has helped the Nation to overcome the Russian space lead at least in the eyes of some world benighteders.

Supersecrecy Likely

The MOL undoubtedly will be a secret effort unless President Johnson reverses a Kennedy directive making all military space activities supersecret.

If the MOL effort is secret the program's activities will be subject to all kinds of innuendos and speculation and suggestions that the Air Force is orbiting an atomic device or spying on Russia, China and—who knows—even France.

The secrecy has already begun in a subtle way. The Pentagon prohibited reporters from naming the Pentagon official who gave a briefing on MOL. NASA's officials speak for the record and can be named.

Manned Space Laboratory Approved

1968 Goal Set; Cost Figured At \$1.5 Billion

By Carroll Kilpatrick
Washington Post Staff Writer

President Johnson gave final approval yesterday for the Defense Department to proceed with the development of a manned orbiting laboratory at a cost of \$1.5 billion.

The goal is to put a fully equipped laboratory into orbit in 1968, to be followed later in the same year by the first of five flights with 2-man crews.

In making the announcement at his news conference, Mr. Johnson promised to continue to seek international cooperation in outer-space activities.

Soviet Aide Invited

As a token of his interest, he said he had directed that an invitation be sent to the Soviet Academy of Science to send a "very high-level representative" here to observe the Gemini 6 flight, scheduled for October. The Soviet news agency Tass carried a brief report on the invitation.

The President renewed his pledge not to orbit weapons of mass destruction. He promised to "continue to hold out to all nations, including the Soviet Union, the hand of cooperation in the exciting years of space exploration which lie ahead for all of us."

In the past, Russian correspondents have never attended space launchings, although the United States did not bar them. Czechoslovakia and some other Communist nations have sent correspondents.

Own Launchings Secret

The Soviets have avoided attendance, it is believed, because they do not want a similar request to view their launchings, all of which have been held in strict secrecy.

There is no discernible reason to believe that the Russians will accept the President's invitation to watch the late October launching in which Astronauts Walter M. Schirra and Thomas P. Stafford will be the pilots.

Mr. Johnson expressed the hope that the Russians would permit one of their scientists to accept the invitation.

"We will certainly give him a warm welcome in America," the President declared.

Spheres of Cooperation

Soviet-American space cooperation has been achieved in some work on weather studies, communications, and in the study of magnetic fields.

While the President laid special emphasis on the peaceful purposes of the manned orbiting laboratory, known as MOL, his decision was a victory for the Air Force, which has done substantial preliminary work on the project.

The Defense Department budget now being debated in the Senate provides \$150 million for MOL in the 1966 budget. Additional funds will be requested over a period of several years.

The ultimate cost of the entire program is expected to be far beyond the \$1.5 billion the President estimated for development.

The Defense Department said that the primary objectives of MOL are to:

- Learn more about what man is able to do in space and how that ability can be used for military purposes.
- Develop technology and equipment which will help advance manned and unmanned space flight.
- Experiment with this technology and equipment.

"Unmanned flights to test launchings, recovery and other basic parts of the system will

begin late next year or early 1967," the President said.

The Air Force has selected the Douglas Aircraft Co. to design and build the spacecraft and the General Electric Co. to plan and develop the space experiments.

The Titan 3-C booster, built by the Martin Co. and United Technology Center, will be

used to lift the laboratory into the sky. McDonnell Aircraft Co. is the contractor for the Gemini spacecraft.

The President paid tribute to the two "very gallant men," —Gemini 5 Astronauts L. Gordon Cooper Jr. and Charles Conrad Jr., and to the hundreds of persons on the ground supporting their flight.

Gemini 5 is a "dramatic reminder," Mr. Johnson said, that the American dream for outer space is "a dream of peace and a dream of friendly cooperation" among all nations.

"We believe the heavens belong to the people of every country," he added.

The Washington Post
26 August 1965

WASH. NEWS 26 Aug 65 (27)

The Military in Space

EVERY improvement in transportation since man learned to walk upright — and thus freed his hands for using weapons — has brought with it a military advantage. Space travel will be no exception.

And unless the United States learns from practical experience what the advantage is, we cannot possibly know how to counter it.

That is the basic reason for President Johnson's warranted decision to order development of a manned orbiting laboratory for military research in space.

We are not the only nation engaged in exploring space. The Russians are up there too, and have openly boasted in the past that they would use their space knowledge for military purposes if it served their interest.

Our own national survival — and the peace of the world — require that we move at least as fast as they do in this field. Otherwise we might wake up some morning and find the Soviets had pre-empted space, and that even our

astronauts had to have a communist permit to take off.

Some may ask why the laboratory which will be a forerunner permanent space stations, has been assigned to the Defense Department rather than to NASA, the civilian space agency.

There are solid answers. NASA is committed to the task of landing a man on the moon. All its efforts are directed to that. While some of its experiments do have military value (such as the Gemini 5 sightings and photographs tests), this is secondary to the no military moon shot.

The orbiting lab and its successor will permit military men to work directly, under unhampered conditions on the problems of defense in space.

Undoubtedly, there will also be objections that the project violates our United Nations pledge to preserve space for peaceful uses. Actually, it goes hand in hand with that pledge.

The United States remains committed, as the President said, never to put mass weapons of destruction into space. This new program is aimed at making certain that neither does anybody else.

WASH. STAR 26 Aug 65 (27)

Orbiting Laboratory

In announcing the decision to give the Air Force a go-ahead in developing "a manned orbiting laboratory," President Johnson has been at pains to stress that "our American dream for outer space is a dream of peace and a dream of friendly cooperation among all of the nations of the earth." And to underscore his point he has invited the Soviet Academy of Sciences to send "a very high-level representative" to observe the Gemini 6 launching in October.

At the same time, however, the Kremlin's propaganda machine has seen fit to denounce the Gemini 5 flight as a spy-in-the-sky operation. The attack is based on the fact, openly set forth in the press kit published by the National Aeronautics and Space Administration, that six of the Cooper-Conrad experiments are military in character, specifically requested by the Defense Department. The Russians have no ground for complaint. It is inevitable that orbital voyages, Russia's included, involve observations of value to the armed forces.

Actually, despite the President's peaceful words, there is no point in trying to argue that the projected "manned orbiting laboratory" is purely scientific in character. It is not purely scientific. It has military potentials of considerable significance, and our country should not apologize to anybody for that fact. The Russians are busy in this field. Why should we ignore it? The simple reality is, as Secretary of State Rusk has warned, that the ocean of space might become a fearsome theater of war in the not distant future. In the circumstances, our country would be guilty of a kind of suicidal passive-

ness if it failed to develop the "manned orbiting laboratory."

The importance of this project can hardly be exaggerated. In the words of General Schriever, chief of our Air Force Systems Command, "The prudent course of action today and for the years ahead is to take out insurance against the use of space for aggressive purposes." To that end, "The MOL is conceived as a literal laboratory in space, which would enable us to study man's adaptability and limitations over prolonged periods.

The results of the MOL experiment would give us actual experience and data to determine man's usefulness in a military role in space."

It seems pointless to try to sugarcoat the fact. The MOL project, which will cost a minimum of \$1.5 billion, is basically military in its objectives. We would be careless and reckless if we neglected to do what must be done in space to keep ourselves and our friends in the rest of the free world reasonably secure.

CHICAGO DAILY NEWS, 26 August 1965 (27)

Those 'Spies' in the Sky

The Russians are both late and naive in making the charge that Gemini 5 is a "spy" mission. Late, because cameras in American and Russian "spy" satellites have been snapping pictures of the Earth's surface for a long time. Naive, because if there ever was a mission in which everything was open and aboveboard, it is the flight of Astronauts Gordon Cooper and Charles Conrad. If they are spies, the word has lost all meaning.

Any venture into space may, of course, produce knowledge useful for military as

well as civilian purposes. It was the Russians' concentration on military rocketry that gave them an early lead in space.

It is quite possible that some of the experiments undertaken by the astronauts in their eight-day Gemini 5 mission will be helpful to military planners, just as the Russian cosmonaut flights doubtless helped the Soviet planners. But the primary goal is to learn about space, not to "spy" on the Earth beneath.

President Johnson neatly disposed of the Russian complaint by inviting Soviet

CONTINUED PAGE 4-E

THOSE 'SPIES' IN THE SKY

Continued

scientists to witness the next Gemini launching. Would the Russians be willing to let American scientists watch their next cosmonaut flight?

In quite a different category was the President's go-ahead for a manned orbiting laboratory (MOL). This \$1.5 billion project is admittedly military, operating directly under the Defense Department. The job of the MOL, in which crewmen will work in orbit for as long as a month at a time, will be to develop and test equipment related "to the defense of America."

Much as we regret this overt intrusion of military technology into space, it is necessary, indeed inevitable, following as it does the development of missiles and unmanned satellites which can observe the Earth for long periods of time.

President Johnson pledged again that the United States would not put weapons of mass destruction into orbit. The MOL will be one means of insuring that no other nation does it, either

The Washington Post

AN INDEPENDENT NEWSPAPER

... FRIDAY, AUGUST 27, 1965

PAGE A24

Secrecy in Space

The President has launched the country on another exciting space venture by setting aside \$1½ billion for starting work on a Manned Orbiting Laboratory (MOL) but he has aroused some anxiety by assigning the project to the Air Force.

Apprehension that the military role would duplicate that of the civilian National Aeronautics and Space Administration (NASA) and involve unnecessary efforts and costs has been an initial worry but the President undoubtedly has assured himself that this kind of waste will not occur in his cost-conscious administration.

The apparent conflict between our treaty commitments against the use of outer space for military purposes and the Air Force role was dealt with by the President at his press conference. The President made it clear that our treaty pledges are still in effect. He said that "the heavens belong to the people of every country . . . We intend to live up to our agreement not to orbit weapons of mass destruction and we will continue to hold out to all nations, including the Soviet Union, the hand of cooperation." The President acknowledged that the wisdom gained in this project will "relate that ability to the defense of America." There is no doubt that NASA experiments have had their defense "fall-out." Moreover military men form a large part of NASA's staff. The Soviet Union, on its part, has found no conflict between its treaty pledges to reserve outer space for peaceful uses and the total conduct of its space projects by the military.

The President did not deal in his press conference statements with a third obvious anxiety over the new role of the Air Force and at an early date he ought to do so. That anxiety arises out of the Air Force commitment to total secrecy in its space operations. After a few false starts, NASA put its operations in a goldfish bowl. It has pursued a brilliantly successful open public information policy. It has made every American a participant in its exciting conquests of space, aroused the national interest in the whole world of science, stirred the youth of the country to enthusiasm and stimulated national pride. The Vandenburg Air Force Base, which will become a major site for MOL launchings, has operated behind a veil of secrecy. It has given its unmanned launchings no prior publicity. It has issued only laconic statements after launchings. No citizen has the slightest basis for a judgment on Vandenburg operations.

promise to serve their interest; and they will have to keep their promises if they want to be re-elected. And this is going to mean, with absolute certainty, the end of racial discrimination in the South. Negroes are going to be full-fledged citizens and they are going to insist on their rights as citizens.

If this is a revolution, it is a happy and orderly one. Its benefits will go not alone to the Negroes but to the whole region in which they have been for so long disfranchised and disadvantaged. As Negroes gain political rights, they will advance economically and contribute increasingly to the region. Most important of all, however, the South will have removed a burden from its conscience and will itself be liberated. "The very clear and very heartening lesson of this wonderful report," as the President said, "is that obedience to the law is a fact of life to so many men and women of good will throughout the South."

The open policy of NASA won this comment recently in *The General Anzeiger* of Wuppertal, West Germany:

The Americans make it possible for the public around the world to participate without reservation in all phases of their exploration of space. To be sure, this carries with it the risk that failures cannot be embellished or excused. But the advantage is that the observer feels caught up in the adventure to a greater degree than if he were served up a success with victory fanfares in an all-inclusive communique.

The Pentagon has not yet devised a policy for informing the public on the man-in-space MOL project. If it continues the Vandenburg policies of the past, the country is going to know very little about MOL. Such secrecy is bound to arouse international suspicions and alarms, particularly since the flights will be over Soviet territory. Either this is primarily a project in the peaceful penetration of space that requires little secrecy; or it is a secret military project that cannot be reconciled with our previous professions. The President, we trust, will make clear which it is. And if it is a peaceful use of space, he ought to impose on the Pentagon the successful information policies of NASA.

BALTIMORE SUN
27 AUGUST 65 P-4
**VANDENBERG
AWAITS BOOM**

Vandenberg Air Force Base, Cal., Aug. 26 (AP)—Presidential approval of the Air Force's Manned Orbiting Laboratory program means a new construction boom at this \$200,000,000 West Coast space center.

Industry sources say projects will run to hundreds of millions of dollars.

Hurling manned military craft into space from here will call for duplication of many of the launching and tracking facilities at Cape Kennedy, Fla., and Houston, but this will be necessary, the sources said, to establish adequate space surveillance.

Polar Orbit Vital

This 83,000-acre spread of brush-covered sand dunes is the only place in the world where satellites are launched into polar orbit—and only by circling the poles can satellites scan every square mile of the earth.

Soviet satellites and those fired from this country's East Coast go into orbits around the earth's middle and thus are unable to keep watch on extreme northern and southern areas.

A fleet of MOL's in polar orbit not only would enhance the Air Force's espionage capability, but also would provide space platforms from which enemy spacecraft and missiles could be detected and destroyed.

Unmanned 1-ton satellites carrying cameras and other surveillance gear have been launched from here since 1961 under the code name Samos.

Two-Man Vehicles

The MOL program calls for 2-man vehicles weighing up to 25,000 pounds—the size of a house trailer, with space for much more elaborate equipment.

They will be boosted by 153-foot-tall, triple-barreled Titan 3C rockets, much too powerful for any existing pads at Vandenberg.

Construction of new pads and tracking facilities may double or triple Air Force investment here, industry sources said, but would be worthwhile because polar orbit shots are impractical from Cape Kennedy. That civilian space center cannot launch to the north or south without flying over populated areas.

Ocean To South

One reason Vandenberg was chosen as the West Coast space center is that it juts out into the Pacific and south of it were thousands of miles of empty ocean into which spent rocket casings can fall without harm.

Defense Department officials have said MOL's would be launched both from Cape Kennedy and Vandenberg but industry sources believe that the eastern firings will be primarily test shot and that polar-orbit requirements mean the operational launchings will be at Vandenberg.

The go-ahead for the \$1,500,000,000 MOL program sparked a new boom in surrounding cities such as Santa Maria and Lompoc, into which Vandenberg already pumps some \$7,000,000 a month in salaries and purchase of materials.

Depressed by cutbacks in defense spending as the nation's missile inventory neared its goal, merchants and real estate men are already busy planning for an expected influx of construction workers and military personnel.

OMAHA WORLD-HERALD
27 August 1965 (1S)

MOL at Last

It is rather difficult in a free society to soft pedal a major space program which is not secret and which was never intended to be secret.

But this the National Aeronautics and Space Agency managed to do in connection with the Manned Orbiting Laboratory.

NASA has shown an unreasonable fear of admitting that space has military uses and, more specifically, that its Gemini program has not been wholly civilian but has had the active and official and announced participation of the United States Air Force.

NASA's reluctance to talk about this fact and its emphasis upon the civilian aspects of its program have come close to misrepresentation. NASA's attitude helps to explain why the Air Force never has been very happy about its secondary role in the Gemini program and why there must be vast relief within the military establishment, the space industry and a good many other places now that President Johnson has chosen to give the green light to the Manned Orbiting Laboratory.

* * *

The MOL is and always has been an Air Force show since it was announced in 1963.

Its purpose is to establish the military usefulness of man in space.

Its scheduled hardware is a two-man spacecraft powered by a Titan III-C booster rocket. The craft would consist of a Gemini-B capsule atop a 10-foot diameter, 14-foot long, canister-shaped laboratory. The total weight would be about 18 thousand pounds; the orbit would be below 350 miles; flights of 30 days in a shirt-sleeves environment are planned, with the two men re-entering the capsule for a return trip to earth.

All of the above facts about the MOL, together with information that the Aerospace Corporation has been in charge of systems engineering and technical direction and that Douglas Aircraft, General Electric and the Martin Company are also doing part of the preliminary planning, have been matters of public record for many months.

And President Johnson's announcement that the laboratory will be built and that \$1,500,000,000 will be asked to cover the cost of development test flights and the building of five MOLs was expected. A decision was to have been made in mid-summer, 1965, and Mr. Johnson is, in fact, a few weeks late.

* * *

We have said before in these columns that if the billions expended on manned space research are to be justified, the United States must make sensible use of the military potential of space.

The Soviets surely have done so from the beginning of their space program, and the United States may well have

lost valuable time by pussyfooting and by pretending that civilian joyriding in space is worth the expenditure of five billion dollars a year.

Now the fetters are off the Manned Orbiting Laboratory. The President has ordered full speed ahead. We think that's fine.

CHICAGO SUN-TIMES, 29 August 1965 (13)

Info Space, Militarily

Orbiting of weapons of mass destruction such as the atomic bomb is forbidden under an international agreement approved by the United Nations General Assembly in 1963. The nations already have the means with which to destroy each other in the giant missiles that can carry a nuclear warhead to a pinpointed target 5,000 miles away.

Up until now, no nation has acknowledged putting any space vehicle into orbit for military reasons. The various Sputniks and Geminis have been sent aloft for scientific study or for peaceful purposes such as weather study or communications.

Last week, President Johnson announced a new space-age policy. He gave the U.S. Air Force permission it has long been seeking to send into space a manned orbiting laboratory (MOL). Five are to be sent up in 1968. They will not violate the UN agreement on orbiting nuclear weapons. They are described as defensive weapons, intended particularly for surveillance. They could be used as another line of defense against enemy satellites. And, of course, like any military machine, the MOL could be useful for offense as well as defense.

It was inevitable that space would become another military theater. But as the world is now constituted, the United States would be risking its own future if it did not look to its defenses in space as well as on Earth.

In this new venture, the United States

continues its policy of operating in the open with candid disclosure. The machines are described and the timetable disclosed. Obviously, details of military secrets will not be revealed but the Communist world is forewarned that America intends to be prepared militarily in space.

This may be inveighed against by the Reds as a warlike step, but reasonable persons throughout the world must be moved to consider this question: What is more warlike, the open society of the United States or the closed society of the Communists, who for all the free world knows, may already be under way militarily in space?

The Communists protest "spying" on them from space. What have they to hide? The United States would not object to Soviet satellites looking us over. President Johnson has invited the Russians to watch the next Gemini lift-off in October, the third such invitation the United States has made to them. The invitation does not even require a similar return invitation from the Russians to watch one of their secret launchings.

The American decision to put a branch of the Pentagon in space must be viewed against this background. Such decisions will be unnecessary when the day comes—as it must for mankind's survival—when all the world will be a society as open as America's.

The New York Times.

SUNDAY, AUGUST 29, 1965.

Space Goals

President Defines Them

Across the scrubby sands and calm lagoons of Cape Kennedy there have been taking shape two of the more astonishing installations of the astonishing U. S. space program. One is the vast launch complex from which the National Aeronautics and Space Administration hopes to send men to the moon in the Apollo spacecraft by the end of the decade. The other, a couple of miles away, is the smaller but scarcely less imposing complex from which the Air Force expects in a year or two to send men aloft to study a grim question: What military use can be made of space?

Last week both enterprises moved measurably closer to realization.

The Gemini 5 spacecraft, recovering from power trouble that threatened to short-circuit its flight, completed its full eight-day mission for a scheduled splash-down in the Atlantic this morning to prove that man can stand a period of weightlessness considered necessary for a round trip to the moon. In the process, the two astronauts aboard set three world records and pushed the U.S. ahead of Russia in space endurance.

And at his news conference Wednesday, President Johnson gave the green light for construction of a \$1.5 billion Manned Orbiting Laboratory (M.O.L.) to explore space for military purposes. The announcement raised the specter of the battlefield one day being extended into the infinity of outer space.

GEMINI'S SUCCESS

From its blast-off at Cape Kennedy a week ago yesterday, Gemini 5 was a source of anxiety and suspense. Three hours after launching, the 7,000-pound spaceship developed problems in the electrical system and there were fears that the mission would have to be ended in the sixth of the scheduled 121 orbits.

But the two pilots—Lieut. Col. L. Gordon Cooper Jr., 38, and Lieut. Comdr. Charles Conrad Jr., 35—cut use of electricity to a minimum and gradually nursed the system back to the point where it was supplying normal power. They then received permission from the Mission Control Center at the Manned Space Flight Center in Houston to continue on a day-to-day basis.

For the next few days the astronauts conducted a full schedule of experiments, always mindful that new trouble might cut the flight short. At one point the heavy work load raised Colonel Cooper's fur. Referring to the experiments, he said over the intercom to earth, "Yeah, well, some of these, like on our time, they were just bang, bang, bang, right together. We just can't do them that close together. That's rather poor planning."

Most of the time, however, the spacemen retained their sense of humor under difficult circumstances, and carried on a steady banter with their colleagues on the ground. They even exchanged bits of original poetry when they were forced into another lull by power difficulties late in the flight.

The late power problems forced the astronauts to curtail their space chores sharply and spend most of their time in drifting flight in hopes of completing the mission. As the capsule tumbled through space, "Mission" Control asked, "You think we could sell that thing as a ride at a carnival?" Colonel Cooper answered, "I don't think you could sell this day-to-day of drifting flight as a ride anywhere."

A major problem was boredom, and to help the astronauts kill time, the ground controllers piped over the intercom what they called "music to drift by." Another problem was the lack of exercise. When Mission Control asked if Colonel Cooper was keeping active, Commander Conrad, chuckling, replied, "I hope to shout. He's upside down in the food box. We're trying to repack them. . . . As a matter of fact, we're up to our ears in garbage."

By this time, however, the astronauts had set the following records:

(1) *Longest flight.* Colonel Cooper and Commander Conrad on Thursday passed the Soviet mark of 81 orbits in 119 hours, 6 minutes set by Valery Bykovsky in 1963, and headed for their planned target of 121 orbits in more than 192 hours.

(2) *Longest total hours in space.* With the Gemini 5 flight, American spacemen surpassed the 507 hours, 16 minutes compiled by Soviet cosmonauts. The full eight-day run by Gemini 5 would boost the U.S. to nearly 644 hours.

(3) *Most hours in space per individual.* Colonel Cooper, who logged 84 hours, 20 minutes on his solo flight in May, 1963, took the lead away from Mr. Bykovsky.

But the main idea was not to play oneupmanship with the Russians; it was to determine what

happens to a human being during eight days in space and what skills are necessary for the rendezvous and docking techniques—approaching and contacting another vehicle in space—needed for lunar exploration.

While definite conclusions must await extensive studies on the ground, here are preliminary estimates of what was learned from Gemini 5 on four major questions:

Endurance. One of the most heartening disclosures of the flight is the new light it has provided on the limitless resiliency of the human spirit. The two astronauts, under constant strain and anxieties, displayed an ability to solve problems which, many space experts contend, could not often be achieved by machines alone.

The spacemen maintained their high spirits even though restless sleep, confinement, chilly nights, itching beards and minor problems with equipment compounded the stresses of living for so long in an area as small as the seating compartment of a sports car.

Frequent measurement of the astronauts' heartbeats, their temperatures and blood pressures during the flight indicated the pilots will come through the experience in good shape. They ate and drank water as well as could be expected and there was no apparent danger of dehydration—a frequent occurrence in a weightless state.

Rendezvous and docking. A rendezvous exercise with a Radar Evaluation Pod (REP), which was carried into space on the capsule and then ejected, had to be abandoned unfinished early in the mission because of the power trouble.

Nevertheless, many of the objectives of that exercise were accomplished later through a highly successful rendezvous exercise with a "phantom" rocket whose orbit and flight characteristics were generated by a computer on the ground. The spacecraft was able to maneuver to change its orbit in the desired way and came within a few tenths of a mile of achieving the exact orbit characteristics the astronauts sought.

Fuel cells. Gemini 5 was the first in-flight test of fuel cells as a source of electrical power. Previous missions used heavier and bulkier storage batteries, which are considered unfeasible for flights of more than four days because of their weight and size. The fuel cells operate on oxygen and hydrogen which are converted into gaseous fuel by heating and fed into the fuel cells. There, electrical energy is generated through a continuous chemical reaction.

Gemini 5 had trouble three times with the fuel cell system: first, before the flight, when difficulty developed in filling the hydrogen tank to the capacity needed; second, early in the flight, when pressure in the oxygen line dropped far below normal; and third, on the sixth day, when the system seemed to produce water too fast, raising fears that the cells might "drown" because there was no way of ejecting the water overboard.

Experts at Houston pointed out that the fuel cells themselves behaved all right, and they expressed confidence that the allied problems could be ironed out for future flights.

Observations and photography. Experiments performed by the astronauts showed that man can effectively photograph and track things on the ground and missiles launched from the ground; take measurements that should lay the basis for a system of identifying man-made objects in orbit; and scan the weather of half a continent at once.

Thus, despite difficulties that plagued the flight from time to time, space experts considered Gemini 5 a success that set the stage for Gemini 6 in October and represented a significant step toward fulfillment of the Apollo project. As to whether the flight put the U.S. ahead of Russia in the space race, George E. Mueller, NASA associate administrator, said, "I don't think any one flight or achievement is going to determine leadership in space. The flights over the long term will provide us with a sound basis for leadership."

AND NOW M.O.L.

As Gemini 5 whirled about the earth, President Johnson issued the order that added a crucial military dimension to the space race. At his news conference, he said he had instructed the Defense Department to proceed immediately with construction of the first Manned Orbiting Laboratory. He said:

"This program will bring us new knowledge about what man is able to do in space. It will enable us to relate that ability to the defense of America. It will develop technology and equipment which will help advance manned and unmanned space flight and it will make it possible to perform very new and rewarding experiments with that technology and equipment."

Mr. Johnson said unmanned flights to test launching, recovery and other basic parts of the system will begin late next year or early in 1967. The initial unmanned launch of a fully equipped laboratory is scheduled for 1968. This will be followed later that year by the first of five flights with two-man crews.

The two-man M.O.L. is the largest manned spacecraft yet planned by the U.S. It will consist of a Gemini capsule attached to a 42-foot-long, 15,000-pound canister that will serve as the laboratory. One-half of the canister will contain instruments; the other, relatively roomy living quarters in which the astronauts can work and sleep "in their shirtsleeves," that is, without cumbersome space suits. The astronauts will return to earth in the capsule, leaving the canister in orbit. The space station will be launched into orbit by the Air Force's Titan 3-C, the most powerful rocket yet developed by the U.S.

The decision to proceed with the M.O.L., long urged by the Air Force and long delayed by the Administration, represented an im-

portant modification of American policy and goals in space. Ever since the space age dawned nearly eight years ago, it has been the policy, incorporated in the 1958 space law, that U.S. activities should be devoted to peaceful purposes. Now the U.S. has made a major and open commitment to explore and possibly exploit space for military purposes.

Actually, in recent years the U.S. has been increasingly active in launching military satellites that have been photographing Russia and Communist China in remarkable detail. The M.O.L. program has been delayed, in part, by the Government's desire to present a peaceful image to the world, and in part by the civilian-military division in the space program. Basically, the argument is one of man-versus-machine, of whether man can perform any military function in space more effectively than an unmanned satellite.

There is general agreement that man probably does not have an aggressive military role in space. But there remains the question of whether man, with a flexibility and power of decision that still surpasses any machine, could not serve a defensive-observer role in space.

M.O.L. will help answer this question. The experimental program will seek to determine the feasibility of using manned satellites as command posts for military operations on earth, to inspect and destroy hostile satellites, to conduct photographic reconnaissance of the earth, and to monitor enemy radio and radar transmissions.

President Johnson sought to play down the military implications of his announcement on M.O.L. He said, "We intend to live up to our agreement not to orbit weapons of mass destruction" and will continue to cooperate with everyone, "including the Soviet Union," in future space exploration. To accent this stand, Mr. Johnson invited the Soviet Academy of Sciences to send observers to the next Gemini launching in October.

Nevertheless, the M.O.L. development caused disquiet across the world at a time when there was hope that current disarmament talks might produce some progress. M.O.L. seemed to raise all sorts of new questions on disarmament. Assuming that Russia has a similar technical capacity to produce orbiting laboratories, outer space from 1968 onward could be full of manned space ships with awesome military potential.

WASHINGTON STAR 2 SEPTEMBER 1965 (3) P-16

Who Will Watch the Watchmen?

By WILLIAM NINES

The Pentagon has surprised almost everyone with its promptness in applying the first squeeze of censorship and news management to its new Manned Orbiting Laboratory (MOL) program.

Most people assumed that soon after the military got a manned role in space, it would start classifying it, but few could have foreseen the rapidity with which restrictions came. The elapsed time from President Johnson's announcement of the start of MOL at his press conference last week to the Pentagon's first fumbling bit of news management was exactly two hours.

The restriction was picaresque and worse than pointless: it was unenforceable. It was characteristic of federal relations with the press in that it had no other effect than to antagonize.

Reporters trooping to an MOL briefing at the Pentagon were instructed that they would not be allowed to make tape recordings or to mention the name of the official (Dr. Albert C. Hall, deputy director of research and engineering), who was briefing them. This exchange then occurred:

"Why not?"

"Because that's the way we prefer to do it."

The briefing was highly technical and contained many points that could be misunderstood by reporters and thus misinterpreted for readers who, in the final analysis, will be paying the expensive tab for MOL. A tape would have been helpful.

The briefing was later transmitted by telephone to the National Aeronautics and Space Administration's Houston center, where a large contingent of reporters was covering the flight of Gemini 5.

The same "no tape, no attribution" rule was invoked at Houston, but was ignored by many reporters who re-

fused to be bound by secrecy they knew could not be enforced. Tape recordings were made and freely circulated in Houston.

Only one apparent purpose can be served by limiting the news-gathering tools of a reporter to pen and paper. Simply and bluntly stated, that purpose is: It is easier to disavow a newsman's notes than an official's own voice. This is a craven device, and when one searches for the author of the unworthy policy behind it, one invariably runs into a stone wall.

The late President Kennedy said, in respect of the Bay of Pigs fiasco, that success has a thousand fathers but defeat is an orphan. The same is true as well of any untenable policy, and the current, long-standing news gag on Russian space accomplishments is an excellent example.

Soon after the Kennedy administration came in, the government ceased reporting Soviet space launchings, including attempts that failed. Manifestly the Russians knew when they launched; they also knew we knew. The people left in the dark were—and are—those here in the United States who are paying for the nation's elaborate and presumably efficient spacecraft detection system. Nobody in the government defends this policy, yet it persists.

The Defense Department is not the only traducer of a free news flow. The space agency gives news management the old college try every time a manned spacecraft goes up.

Of all the significant news locations in a Gemini flight, the only one not covered by the combined news media (meaning press, radio and TV) is the most important one of all, the mission control center at Houston.

It is not a secret place, nor one in which unnecessary

traffic is discouraged. Flight director Christopher C. Kraft already has stated publicly that he would rather have a Soviet observer in his control center than an American journalist. Further, every clerk and secretary among the 4,600 NASA civil servants who could spare five or ten minutes from work was encouraged to look in.

On one flight the motion picture actor Jimmy Stewart was an interested observer. Even newspaper publishers have been admitted, possibly on the theory that they are not really "working press," and hence harmless.

But neither camera nor tape recorder nor pen-and-paper reporter is allowed in the non-secret room at any time during a flight. This is a measure of how far we have come toward government control of news in 20 short years. Even in the super-secret atom bomb project, the national press had a "pool" representative, William L. Laurence of the New York Times. This is not to suggest that there has been any "cover-up" to date. In the course of missions, Kraft gives regular, full and apparently frank accounts of flight activities, and opens himself to detailed questioning. So do his associates. A mission commentary of less consistent accuracy and authenticity is broadcast.

But whether or not there has been suppression to date is not the point. All flights so far have ended happily, and nothing succeeds like success. There has been no reason for a cover-up.

The point is that the opportunity for news management definitely exists in mission control—and it is an axiom of political science that where opportunity exists, there are always people waiting to seize it.

TO: Col Warthman

FROM: YOUR AGENT IN
ANCHORAGE

STIC: MOL

Security: Pub Info Clippings ✓

Anchorage Daily Times

Page 4

EDITORIAL PAGE

Friday, Sept. 3, 1965

Manned Space Labs New Warning Sites?

THE EIGHT-DAY Gemini V flight proved that space has a strong military capability.

The uncertain factor after Gemini IV was whether man could operate efficiently in a satellite for extended periods.

Medical reports on astronauts Gordon Cooper and Pete Conrad have proved that man can.

This makes possible the hurry-up program on the Manned Orbiting Laboratory announced by Defense Secretary Robert McNamara.

The story behind that hurry-up is simple. There's new evidence the Russians are bearing down hard on building a manned military satellite laboratory of their own.

Why this race?

AS SOVIET intercontinental ballistic missiles get better, some way must be found to get an earlier warning of Russian ICBM attack.

Practical warning time at best now is considerably less than 15 minutes.

As the Soviet Union builds a fleet of Polaris-type missile submarines, there will be less warning time. Any missile fired a few hundred miles off the U.S. coastline may well get to target before defenses can be alerted and operating.

Manned satellites high enough in space and armed with infrared sensors should be able to continuously scan the Soviet Union and

the oceans, thus increase the warning time for defense against both Soviet ICBMs and submarine-fired, Polaris-type missiles.

Such a manned-satellite, early-warning system could be operational before 1975, now that it's known man can operate in space for extended periods.

SOVIET MILITARY men have the same problem of early detection. They aim at quicker knowledge of any U.S. Polaris missile firings.

It may be too risky to let the perfected, decoy-loaded, zigzagging Russian ICBMs of the 1970s get close enough to vital U.S. targets to be knocked out by Nike X.

It may well be safer to develop a defensive antimissile-missile, based on a space platform, that would blast out Russian missiles before they crossed the Atlantic or Pacific.

Some missile men believe it will be essential eventually to put attack missiles similar to Polaris or Minuteman on manned space platforms. They believe that, properly constructed and fired, such missiles would have a better chance than ground-based Minutemen of getting through the Soviet antimissile defenses of the mid-1970s.

Some competent space scientists privately say it would be wise to explore the possibility of some day establishing missile bases on the moon.

Ne
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DEPARTMENT OF THE AIR FORCE
OFFICE OF THE SECRETARY

MEMORANDUM

3 September 1965

Col Carter,

I have reviewed the attached document
and informed Colonel Sanders that it looks OK
^{from} for my viewpoint. My contact with him indicated
that he had not provided you a copy, so one is
attached.

General Evans

1 Atch
a/s

① Col Worthman

② File MOL 1F2

plw
UNCLASSIFIED

DRAFT AIRGRAM

Return to Col SANDERS

10824 w/ Army

Committee of 100

McCaffrey 10/1/68

plw

TO: All Diplomatic Missions

SUBJECT: Manned Orbiting Laboratory Space Project

On August 25 President Johnson announced that he was instructing the Department of Defense to proceed with the development of a Manned Orbiting Laboratory (MOL). The President's statement on MOL is annexed.

Various questions as to the nature and aims of MOL have come up in the U.S. and abroad. Any presentation or explanation of the MOL project will of course have to be so couched as to be suitable in terms of the local situation and circumstances, but the general stance that should be taken is this:

The MOL project will doubtless produce benefits in terms of scientific knowledge and the advancement of space exploration generally. It has not been and should not be justified or explained for that reason. It is a military project, to be undertaken for reasons of national security, and requiring no apologies, camouflage, or more justification than any other projects undertaken for this reason. It has no "weapons in space" or "bombs in orbit" aspect whatever,

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and is neither illegal nor unique. It does not represent a new policy departure by the U.S. Government, but is a logical next step in the overall U.S. space program, which has had both military and non-military components from the beginning. MOL is an experimental, research project, which has been planned and talked about for nearly three years, and which is aimed solely at finding out more about what man can do in space and how that ability might be related to the defense and security of the U.S. and the free world.

The following more detailed information, set up in question and answer form for convenience, may be useful to posts in answering press or other queries, or volunteered as may be appropriate.

Q. What is the MOL project?

A. A manned space flight project, of a research and experimental nature, which will put two men into space for periods of up to 30 days, in a "shirt-sleeves" environment, with the object of finding out more about what man is able to do in space and how that ability can be related to defense purposes. Five such manned launches are presently planned, starting in 1968. MOL experimentation will run into the 1970's.

Q. What is meant by a "shirt-sleeves" environment?

A. An environment spacious enough and safe enough to enable men to live, move, and work in it without having to use space suits. The MOL was once

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described by Secretary McNamara as to be about the size of a small house trailer; what is now envisaged is a laboratory "canister" about 40 feet long and 10 feet in diameter, joined to a Gemini capsule, the whole thing to be launched by a Titan III-C booster. Each man will have about 400 cubic feet of space in which to live and work.

Q. Who will carry out the project?

A. The U.S. Air Force, under the direction of the Department of Defense. The Douglas Aircraft Company and the General Electric Company will build the spacecraft and plan and develop the experiments respectively. MOL flights will be directed by the Air Force Satellite Control Facility, Sunnyvale, California. We anticipate that MOL launches will be carried out from both the East and West Coasts.

Q. What kind of experiments will be conducted?

A. The project directors will be considering for some time yet what defense-related experiments would seem to offer the most promise, but there is interest by the Air Force in building and assembling large antennae for communications purposes, and by the Navy in experiments of potential usefulness in antisubmarine warfare. The Army has not as yet recommended any experiments. Other representative examples of defense experiments that might be carried would deal with space structures technology, guidance and navigation, and extra-vehicular activity and equipment. In addition to defense-related experiments, scientific experiments devised by NASA may be included.

Q. What is the relationship between MOL and nuclear weapons in space?

A. There is no relationship whatever. The MOL is a military program which is peaceful -- i.e. non-aggressive -- in character. MOL will not be a bomb carrier.

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At the same time that he announced the decision to proceed with the MOL, President Johnson reaffirmed the U.S. intention not to place weapons of mass destruction (WMD) in orbit. The President said "We continue to live up to our agreement not to orbit weapons of mass destruction and we will continue to hold out to all nations, including the Soviet Union, the hand of cooperation in the exciting years of exploration which lie ahead for all of us."

By way of background, two years ago the U.S. and USSR each stated it would refrain from orbiting WMD in outer space or stationing WMD on celestial bodies. The U.S. and Soviet statements were expressly welcomed by the UNGA in resolution 1884 (XVIII) adopted unanimously October 17, 1963, as an important step in preventing the spread of an arms race to outer space. The resolution calls for on all states to refrain from conducting or encouraging such activities.

Q. Doesn't the MOL approval nevertheless mean that the U.S. has embarked on a new policy with respect to military activity in space?

A. No, it does not. The MOL fits into and is a logical next step in a continuing U.S. military program in space which derives from our Space Act. The Act itself makes clear that the U.S., while seeking to help develop space for peaceful purposes for the benefit of all mankind, intends to utilize its space activities in maximizing its defensive capability.

The MOL was first announced in December, 1963, at the time when DYNASOAR, a manned-flight project dating from the 1950's, was cancelled. DYNASOAR was cancelled because it was aimed solely toward the development of advanced reentry techniques. MOL began to be studied at that time because it seemed to give promise of being a broader and more useful research and experimental program, focussing on man himself in space rather than machinery, equipment, and techniques as such.

UNCLASSIFIED

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Q. Won't the MOL approval touch off a military space race with the Soviets?

A. We see no reason to think this. The Soviet Union has for some time been carrying out a comprehensive space program involving manned and unmanned flights of various kinds, and doubtless will continue to do so. The U.S. has no desire or intention to engage in a military space race with the USSR. Our only intention is to take measures in space as elsewhere that prudence dictates in terms of our national security.

Q. Why does this have to be a manned operation; couldn't unmanned satellites do the job, whatever it is?

A. If there were a computer which did not have to be programmed, could therefore think independently, and had eyes and hands to be put at the service of that thinking ability, the man might well be taken out of the manned orbiting laboratory project. Despite the crush of automation, this is not the case now or in the foreseeable future. Man still have a unique role to play on land, sea, and air for many defense and other purposes. The MOL project is a research effort to see whether this is true in the new environment of space as well.

Add following sentence to general stance section on p. 2:

We are not trying to publicize or drum up interest in MOL, but are fully prepared to deal with any questions about it, within the limits of disclosure normal for any defense project with classified aspects.

C/WH:SGeorge:SGL-Mr. Reis
9/2/65

Clearances:

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SGD/ISA -

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FRIDAY MORNING 3 SEPTEMBER 1965

WASH POST 3 Sep 65 p. 22
Top Secret MOL:
Security in Space

By Marquis Childs

THE HUSH-HUSH curtain around the Manned Orbiting Laboratory is so thick that the atmosphere is a little like the wartime Manhattan Project that produced the atomic bomb. As one official with great responsibility for national security put it: "I wish nothing at all could be said about it but I suppose that's impossible."

This first entry of the military into space would undoubtedly, if wartime censorship were applied, be off limits for comment. Official discussion thus far has been phrased in general hints and cautious intimations of what MOL can and cannot do.

But those closest to the lengthy review of the project and its final authorization swear that its thrust will be for peace and not for war. Before President Johnson announced that the Air Force was authorized to develop the \$1.5-billion laboratory in outer space the proposal had been surveyed from every angle by the space council of which Vice President Hubert Humphrey is chairman. Director James E. Webb of the National Aeronautics and Space Administration, hitherto with exclusive jurisdiction in space, is a member of the council.

PIECING TOGETHER what has been said so far about MOL and with a bit of conjecture, the picture that emerges is one of a far-out operation and far

out not just in space geography. It is the application of techniques of communication and observation matching the wildest science fiction.

MOL is a step forward—and a giant step—in the capacity to know instantly and to communicate with the same speed what is happening on the earth, in the waters around the earth or in the air above. The first step was the U-2 spy plane which, as the boast went, could photograph ants on the sidewalk from 60,000 feet.

But compared to the second step, the Samos satellite, the U-2 was a comparatively crude instrument. Also under a classified label so that no official can discuss it, Samos has from outer space made detailed photographs of much of the earth's surface and transmitted them back to receiving stations. Thus a vast mosaic of the globe, showing natural and man-made phenomena, is assembled under a secret label.

MOL carries this a big jump forward, since the instruments the laboratory will contain can do far more than photograph the surface. Radio frequencies, radiation, heat, sound—all are believed to be within the scope of the laboratory. Moreover, men working in their shirt sleeves—not in space suits—will be using instruments hitherto undreamed of. Both the President and Defense officials stress that MOL will not in any way violate the United Nations resolution sponsored by the United States to keep weapons of destruction out of space. The emphasis at a Defense Department briefing was on military programs which do not involve destruction and yet, in the words of the briefer, support the safety of the country.

BUT THE disturbing question around the world, despite these disclaimers, is

whether MOL will not now touch off a military race with the Soviets in space. A Defense Department spokesman was asked if the assessment had been made on how the Russians might react to a manned military laboratory overflying the Soviet Union. He replied that he assumed that they do not object, since they overfly the United States.

Former Premier Nikita Khrushchev once boasted that Soviet satellites were constantly photographing military installations in this country. This was his answer to the achievements of Samos. Presumably in what might be called a spy-in-the-sky race the Soviets could build their own orbiting laboratory.

Another question is why NASA with its extensive experience in space was not given the laboratory assignment. One answer from those responsible for the decision is the top-top-secret nature of the whole operation. It can best be done in a partitioned-off section of the Air Force where top-secret clearances are taken for granted. Put into NASA's big organization it would mean elaborate new security procedures and the possibility of the kind of unhappy conflicts that arose in the early days of the Atomic Energy Commission.

There was, of course, a more immediate and pressing reason. For years the Air Force has been demanding a role in space. And congressional allies of the Air Force pushed for the same goal.

NASA's reaction might best be described as one of dignified silence. The decision, NASA officials say, is in accord with the national interest and beyond this they say little other than to add that later NASA may purchase an added "vehicle" for its own scientific purposes. The future is here and MOL is one of its shapes.

WASH. POST. 9/5/65 p.1(7) TUESDAY MORNING 7 SEPTEMBER 1965

Role in Arms Control Clinched MOL Victory

By Howard Simons and Chalmers M. Roberts
Washington Post Staff Writers

America's newest and biggest spy-in-the-sky opens the possibility for a major new move in the field of global arms control.

Large and powerful segments of the Johnson Administration were sold on the Air Force's Manned Orbiting Laboratory (MOL) simply as an intelligence tool. But it was the added possibility in the arms-control field that brought unanimity.

As one key official put it: "If this does what we think it will do, MOL will be the greatest boon to arms control yet."

This is the kind of reasoning that overcame the concern of those who worried lest the thrust of military man into orbit around the earth would erode the carefully created image of the United States as totally devoted to the peaceful uses of man in space.

The primary mission of MOL, a canvass of Washington officials makes clear, is without doubt to have man supplement the machine as a shutterbug spy in the sky. Hence man will advance the sensationally successful camera work of the unmanned Sam's series of photo reconnaissance satellites now producing thousands of pictures of the Soviet Union and Communist China.

Human judgment is the critical new factor being added by use of the MOL, a house trailer-sized space vehicle in which two men will be able to live and work for 30 days in their "shirtsleeves." It is scheduled to be operational in 1968.

Here is what the Air Force believes these men will be able to do:

They can use their judgment on what to photograph. They can be selective on when and where to aim not only one camera but a series of cameras including new and experimental photographic equipment. They can shoot accurately through a hole in clouds. And they can maintain and repair equipment that may have become inoperative.

Dramatic reinforcement of these notions came during the recent eight-day Gemini 5 flight of L. Gordon Cooper Jr. and Charles Conrad Jr. The astronauts made repairs on equipment, most notably on a sighting device for enabling them to pinpoint targets in space and on the earth.

Moreover, in a conversation with Ground Control, Conrad spoke enthusiastically about his use of a commercial camera lens known as a Questar, modified to fit into a space capsule without altering its capability.

Said Conrad: "The Questar lens — the 9000-foot runway up here fills the whole lens up and the probability of having it pass through the Questar field of view is virtually impossible. . . . we've got plenty of pictures for them out of the Questar anyhow. Over 70."

Although MOL will carry other kinds of electronic eavesdropping equipment, as well as some basic scientific and engineering experiments. Administration officials are emphatic in declaring that it will not be a research "junk shop," as one highly interested Senator expressed a fear it might become.

Nor will MOL be a weapons carrier. In announcing the go-ahead on Aug. 25 for the \$1.5-billion project, President Johnson declared that the United States intends "to live up to our agreement not to orbit weapons of mass destruction." He was referring to the American-sponsored United Nations resolution, accepted by the Russians, to ban nuclear weapons in outer space.

It is the Pentagon's continuing and unanimous position at the top level — and it is also felt this is the Soviet position — that an intercontinental ballistic missile fired from the ground to a target halfway around the world is a far more effective weapon than any foreseeable orbiting system.

By the same token the idea of dog fights between space vehicles is generally considered science fiction, at least for the immediate future.

How, then, will MOL contribute to arms control?

The thesis is that the two major nuclear powers are deterred not only by the nuclear weapons they possess but by what each knows — and how fast it knows — about what goes on, in a military sense, in the other's country. It is hoped that MOL will immensely add to that American capability in relation not only to the Soviet Union but to China and, indeed, the whole world.

In short, MOL could lead to a space-age version of former President Eisenhower's "open skies" airplane inspection proposal, put forward at the 1955 Summit Conference in Geneva and rejected by the Soviet Union as being no more than

an American intelligence program that would be a violation of Soviet airspace.

But spy satellites now circle both the United States and the Soviet Union without official protest from either Washington or Moscow. And just as the United States is embarking on the MOL project, so the Soviets are expected to embark on a similar effort.

Indeed, it is not inconceivable that these developments could lead to manned synchronous satellites, able to hover over Russia and the United States ready to flash instant word on missile firings, rocket tests, nuclear explosions, mass troop movements or other important military activities.

The logic of this, from the arms controllers' viewpoint, is that all this could lead to a formal worldwide inspection agreement — peacekeeping from space. But short of such agreement, such space surveillance would vastly add to the deterrence on which today's nuclear peace is founded.

It was at a Budget Bureau meeting in November, 1963, that the MOL concept was formally proposed, largely as a sugar-coated pill to counter the bad reaction the Air Force was expected to — and did — have when it learned that Defense Secretary Robert S. McNamara was going to kill its manned DynaSoar orbital glider program.

A month later, on Dec. 10, 1963, McNamara announced publicly the cancellation of DynaSoar and the intention of developing MOL.

For roughly a year thereafter, the Air Force paraded a series of MOL objectives before hard-nosed, cost-conscious Defense Department officials. Each time, the Air Force schemes were rejected on the grounds that they did not demonstrate a real need for Air Force men in space.

Then the Air Force, with the help of Defense Department scientists, turned the corner and came up with the need for more intelligence—a need that neither unmanned satellites or the civilian National Aeronautics and Space Administration could fill.

In the fall of 1964, \$150 million was included in the Pentagon budget for MOL.

Still, there were skeptics. Would MOL be secret, and if so, what effect might this have on the world's image of America's hitherto peaceful manned space effort?

Yes, it will be secret, as are all military space activities, including the launching thus far of twice as many unmanned American satellites by the Defense Department as by NASA. Yes, too, MOL probably will detract in part from the gain that the civilian space effort has accumulated in dramatically demonstrating the difference between the American open society and the Russian closed society. But on the

decision scales, the need to know whether the military has a role in space, the need to know more about potential enemies and the possibility of a new thrust toward meaningful arms control outweighed the propaganda loss.

What would MOL's effect be on NASA? asked some questioners. Doesn't MOL really mean the military camel is getting his proverbial nose under the manned space flight tent? Not at all, said the officials, at least not for the immediate future.

That question was resolved, in large part, at the National Aeronautics and Space Council table, with Vice President Hubert Humphrey in the chair. The Vice President, long active in promoting disarmament, sought the answers to some 25 questions before he was convinced that MOL's peacekeeping potential outweighed possible serious international repercussions from putting the military into manned space flight.

Furthermore, NASA's top officials were enthusiastic about MOL. It would employ NASA know-how, technology and equipment such as a modified Gemini capsule. And they were satisfied that MOL is a limited and nonduplicating program.

MOL, as now approved, represents an opportunity for the Air Force to learn whether it has a meaningful role for itself in manned space flight in addition to just that in the intelligence field. A decision to give the Air Force a follow-on manned space role will come only after MOL demonstrates what it can or cannot do.

Would MOL be a "junkshop or a workshop?" asked other interested parties, mindful that in the past Air Force officers had offered long shopping lists of what they would like to put in MOL.

The lists included experimental communications and navigational devices; basic scientific experiments such as those to study solar radiation, infra-red or heat-sensing devices for registering the radiation signatures of missiles in flight and on the ground; material such as fluids and lubricants and metals that someday may have to withstand the harsh environment of space for more than 30 days as the building blocks of permanent manned orbiting space stations.

Pentagon officials also have talked about satellite inspection, that is, the ability to rendezvous in space with another nation's vehicle to determine what it is doing and what it is carrying.

NEWSWEEK 6 September 1965 (2)

EYE IN THE SKY

A heavyweight platoon of generals and congressmen, firmly convinced that the U.S. should control the high ground of space, has long argued that the Air Force should be given a major role in manned orbital flight. But some, most notably Secretary of Defense Robert S. McNamara, have questioned whether earthbound military tactics apply directly enough to space to justify the tremendous expense of two manned-space programs.

The Secretary is still not wholly convinced, but last week the Air Force got the chance to prove its case. Acting on McNamara's recommendation, President Johnson announced that the General Electric Co. and Douglas Aircraft Co. had won the long competition to begin development of MOL—the Manned Orbiting Laboratory. The cost: a hefty \$1.5 billion.

The vehicle chosen for this first military mission is palatial by Gemini standards. A cylinder 41 feet long and 10 feet in diameter, MOL will provide nearly all the comforts of home: roomy working and living compartments, ample stores of food, water and air, a "shirt-sleeve" environment that will permit its occupants to go about without bulky space-suits—and an unsurpassed panorama of space and earth below.

Round Trip: MOL itself will be unoccupied during its flight into orbit. Instead, the two passengers will ride in a modified Gemini spacecraft, fastened to one end of the cylinder. Then, once in orbit, the crew will crawl through a lock and into MOL. As planned now, they will circle the earth for about 30 days before crawling out of MOL; and returning to earth via Gemini, leaving the space station behind. (Whether MOL can be reoccupied will depend on the ability to rendezvous and dock with it, and also on its supply capacity.)

MOL is no orbital bomber. The U.S. has committed itself to the United Nations to use space only for peaceful purposes, and President Johnson took pains last week to reiterate that pledge. "We intend to live up to our agreement not to orbit weapons of mass destruction," he said. But the U.S. evidently makes a distinction between an aggressive satellite and simply a military one, for the main purpose of MOL is obviously to gather intelligence.

Since Aug. 11, 1960, when the Air Force successfully recovered a film-carrying capsule ejected from orbit, the U.S. has been actively engaged in military surveillance of the Communist bloc. It is a two-stage operation. First, camera-carrying satellites, launched from

California by Thor-Agena boosters, conduct a broad photographic survey. After the film package is recovered it is analyzed by photo interpreters. If they spot anything of particular significance, a larger satellite is sent up for a sharper look with higher resolution cameras. These satellites, formerly called Samos but now not even acknowledged—much less publicly named—are launched by Atlas-Agena rockets and stay in orbit for only a day or so before jettisoning their precious film for recovery.

Since 1960, as far as can be determined from the meager launch information, at least 58 Thor-Agena payloads have been sent up over the Soviet Union and recovered; another 26 Atlas-Agena payloads have been recovered. In turn, the Soviet Union has launched 34 Cosmos satellites at an angle that would cover all the U.S.; most of these are believed to be photo satellites.

Rich Reward: Clearly, judging by the effort and the money expended, the program has been paying off for both sides. Indeed, many analysts believe that surveillance satellites gave President Kennedy the confidence to confront the Soviet Union over Cuba in 1962. The satellites revealed that the Soviet force of intercontinental missiles was much smaller than imagined and vulnerable to attack. It is likely that President Kennedy even let the Soviet Union know that he knew, by means of a newspaper "leak."

The question now is, can the presence of man in orbit produce enough additional information to justify the cost of getting him up there? To use Secretary McNamara's phrase, would a manned surveillance satellite be cost-effective? Many believe the answer is yes. Man's judgment and serendipity cannot be duplicated by machines, proponents argue. He can pick and choose his targets and his camera system, study photographic results on the spot, photograph suspicious areas again and again to measure activity and report what he sees instantly to the ground.

The MOL crew, of course, will be able to conduct much valuable research of an entirely benign character, such as weather study, astronomy and a host of biological experiments into the effects of weightlessness, radiation and high vacuums on life. But MOL will stand or fall on its ability to study the Soviet Union's land defenses, count its aircraft and missiles, spot its submarines, and eavesdrop on its radio communications. In addition, it will probably be required to keep track of Soviet agricultural production, to record activity at every sort of industrial undertaking from steel factories to plutonium-production plants and generally to monitor the entire Soviet and Chinese economies.

High Price: At perhaps \$70 million per launching, only a rich harvest of such intelligence would justify carrying MOL beyond the experimental stage. "MOL is really an Air Force toy," one high Pentagon planner said recently. "It's fascinated with the idea of putting men in space, but there are still many unanswered questions as to whether we really have to put men there."

One unanswered question involves an entirely different surveillance system the Air Force has also been studying. It is a 10-ton unmanned vehicle, stuffed with cameras, sensors and detectors, and possibly capable of maneuvering in orbit. It will also be equipped with a half dozen maneuverable re-entry vehicles, which could literally deliver the film packages on the front doorstep of a photo-interpretation lab. Such a surveillance system could conceivably give MOL stiff competition.

All these doubts and objections notwithstanding, everything is now "go" for MOL. There is \$150 million in the current budget to get the program rolling, and the first manned launching is scheduled for late in 1968—probably a realistic date, since the launch vehicle, the huge Titan 3-C, has already had its first successful firing, and will be ready in plenty of time.

AVIATION WEEK, 6 September 1965

Manning the Space Ramparts

President Lyndon Johnson's decision to proceed with the development of a military manned orbiting laboratory, combined with the record-breaking endurance flight of Gemini 5, marks a significant milestone in the progress of manned space flight. The last two Gemini missions have shown clearly that the U. S. manned space flight program has come of age technically. They also demonstrated the operational flexibility that can be achieved in long-duration manned missions.

With each new manned mission, the Gemini program is forging a record that insures its place in space history as the great leap forward in space flight that transformed the role of man himself from that of a surviving passenger to a useful performer of vital functions in the space environment.

The Gemini program is making a great technical contribution to both the Apollo lunar landing mission and to the development of a military manned orbiting laboratory (MOL). Final decision by the President to proceed with hardware development of MOL represents the end of a 10-year struggle by the Air Force to gain a role in manned space flight. It also is a reversal of policy on this point by the two previous presidents. For too long, the military role was blocked by the "peaceful uses of outer space" motto so hastily and ill-advisedly concocted by the Eisenhower Administration to conceal its own sterile space policy that gave the Soviets an early lead in space exploration. Unfortunately, this same policy was continued by the Kennedy Administration, which also interpreted "peace" to mean "non-military." The Kennedy Administration proclaimed this policy publicly while actually utilizing a satellite reconnaissance system to spy on the rest of the world, including Communist China and the Soviet Union.

It was really the conclusive demonstration that adding a long-term manned capability would improve satellite reconnaissance by orders of magnitude that finally forced the decision to proceed with MOL after nearly two years of delay under the guise of "further study."

The Air Force has been given primary management responsibility for the MOL program, although it has important naval aspects as well. USAF has selected a strong industrial team to develop and build the required hardware, with McDonnell for the Gemini re-entry vehicle; Douglas for the laboratory can; General Electric's Missile and Space Div. for instrumentation and experiment integration; Martin for the Titan 3 booster core, and United Technology Center for the solid-propellant strap-on boosters.

Much of the Air Force's future rides on the outcome of MOL. It behooves this service to organize a management for this effort composed of its very best available

talent. The MOL management team also will require the consistent support of the top-level USAF command against the inevitable pressure both from within the Pentagon and from other government agencies that will seek to slow its progress and blunt its effectiveness. The primary purpose of MOL will be reconnaissance. If it is successful in this mission, it will, in fact, add a tremendous force to the capability of this country to keep the peace. We can think of no more "peaceful" purpose in space than to provide a capability that further diminishes an enemy's ability to prepare and mount a surprise nuclear attack—the only type that could possibly offer even the remotest chance of success.

Reconnaissance is a necessary and effective weapon in the Cold War. Its extension into space by both the U. S. and USSR took place several years ago, despite the pious pretensions of the diplomats that it hasn't. The U. S. was first to develop a successful system in this field with its Samos satellite launched into polar orbits from Vandenberg AFB, Calif. The data obtained from this system has been of tremendous value to the defense of this nation and the rest of the free world. Its operations are no secret to the Soviets, who have countered with their own reconnaissance satellite system, which is launched from Tyuratam under cover of their Cosmos series. Soviet manned space launches also have traversed the United States several dozen times and undoubtedly will continue to do so. When he was Soviet Premier, Nikita Khrushchev several times pointedly offered to exchange satellite reconnaissance pictures with the West to demonstrate Soviet capability in this area.

The United States would be well advised to consider its public relations policy on MOL. It would do well to avoid the type of obvious phony "cover," originated by the Central Intelligence Agency, that has embarrassed this country so badly in the case of the U-2 and other reconnaissance efforts. The reconnaissance techniques and results produced by MOL are certainly legitimate military secrets, although there may be times when their publication to the world may prove conclusively the perfidy of an aggressor, as in the Cuban missile crisis. But to adopt an ostrich head-in-the-sand policy and attempt to preserve the fiction that the U.S. does not indulge in space reconnaissance would only make us look foolish.

The fact that this nation is improving its capability to defend itself and the rest of the world by means of manned space vehicles is news that can only reassure our friends and dismay our enemies. The MOL program is one of the most important efforts this nation has made to improve its defenses in the nuclear era. It is technically feasible and nationally necessary.

—Robert Hotz

NEW YORK TIMES
10 SEPTEMBER 65 P-12
**Soviet Says U.S.
Plans Orbital Lab
As A-Bomb Base**

MOSCOW, Sept. 9 (Reuters)

-- A Soviet general said today that the United States was developing a manned orbital space laboratory to be able to bombard the earth with nuclear bombs.

The allegation was the first Soviet response to President Johnson's announcement of Aug. 25 that the United States would develop a \$1 billion space workshop devoted to defense research.

"Now the Pentagon wants to use space laboratories not only for espionage but also to accomplish direct combat tasks," Col. Gen. Vladimir Tolubko, Deputy Commander in Chief of the Soviet Union's strategic rocket troops, wrote in a magazine article.

He reiterated a West German newspaper's view that space laboratories could be used as platforms for dropping bombs in outer space, and added:

"The question suggests itself: What bombs? Is it possible that the Pentagon generals intend to drop conventional aerial bombs from outer space? Of course not. Surely, nothing but nuclear bombs are implied.

"All this does not tally with [President] Johnson's hypocritical announcement about extending the rule of law to outer space," he added.

The general's views appeared in a news and opinion magazine, *Za Rubezhom* (Life Abroad), published by the Soviet Union of Journalists.

General Tolubko said President Johnson had tried "to allay the suspicions of world public opinion" while the United States designed and tested space carriers for weapons of mass destruction "under the signboard of peaceful and strictly scientific research."

THE NEW REPUBLIC 11 September 1965 (9)

The Military Moves into Space

President Johnson's decision to allow the Air Force to build and launch five manned orbital laboratories (MOL), at a cost of \$1.5 billion or more, is likely to increase tensions between the US and the USSR and to spark a similar military space program by the Russians. If so, the Air Force will certainly urge further escalation of its own military space program, raising the specter that space will become a fantastically expensive battlefield of the future.

Even before the Russians launched the space age in October 1957 with Sputnik I, some US Air Force officers were predicting, almost hopefully, that military operations would move out into space as a logical extension of aerial combat. In their ignorance of the rigors and the immutable laws of orbital physics, they envisioned space bombers that would drop their weapons from space and spacecraft interceptors that would shoot down enemy orbital bombers and engage in space dog-fights. The scenarios were drawn largely from the Buck Rogers comic strip of the late 1920's.

These ambitions were frustrated in 1958 when the Eisenhower Administration and Congress decided to emphasize peaceful exploration and established a civilian space agency—the National Aeronautics and Space Administration (NASA). One major reason for giving the MOL program to the USAF rather than to NASA is that the space agency has avoided military space activities partly in deference to neutral African nations which provide sites for critically needed tracking stations. The USAF had to content itself with developing unmanned Samos reconnaissance satellites and unmanned Midas satellites, the latter designed to warn of enemy missile attack. For several years the USAF sat on the sidelines of manned space operations, providing the rocket boosters, many of the astronauts and much of the know-how for NASA whose resulting Mercury shots served to boost the space agency's prestige and its budget.

Then, in the spring of 1961, President Kennedy proposed that NASA launch its Apollo lunar landing program, a project which would swell its budget and prestige dramatically. The USAF counter-attacked with a propaganda campaign to convince the public and Congress that space posed a grave military threat and that the Kennedy Administration was derelict in not allowing the Air Force to develop manned military spacecraft. Gen. Bernard A. Schriever, commander of the Air Force Systems Command and who, last week, was named to direct the MOL program, said in October, 1961: "We cannot permit space to be dominated by those who have shown themselves to be the enemies of freedom. For the nation that dominates space might—if it chose—dominate the world." Gen. Schriever went on to recommend the development of manned military spacecraft, calling them "vital" for the "ultimate survival of this nation and the rest of the Free World."

For the next 18 months the nation's press was filled with articles, inspired by the Air Force, telling of the dire threat to national survival unless the Kennedy Administration changed its views. (See "That Attack From Space," NR, May 4, 1963, p. 17.) The Air Force view was echoed by its champions in Congress and was later raised, weakly, by the Republicans in the last Presidential campaign.

When Defense Secretary McNamara asked the Air Force for details on the military operations it proposed to conduct in space, the answer boiled down to this: "We really don't know, but if we can have a few billion dollars to go up and look around, perhaps we can find a mission in space for man." At a time when the US had increased its defense spending by 20 percent in a crash effort to overtake the Soviet lead in ICBM missiles, it is not surprising that the USAF requests were turned down. Nearly two years ago, McNamara finally told the Air Force to come up with specific proposals. Despite the years of public complaint that it was being blocked from performing vital military space missions, the Air Force had to turn to industry and civilian scientists to suggest useful military tasks in space and experiments to demonstrate their feasibility. Meanwhile, the experience gained with the Samos and Midas unmanned satellites had begun to suggest that military observers in space might prove useful. Samos had to make thousands of reconnaissance photos which must later be painstakingly analyzed on earth by photo-interpreters to locate those containing objects of military interest; perhaps a trained photo-interpreter in space could be much more selective and photograph only those areas of potential interest.

The Midas satellite, designed to detect enemy missiles from their infrared (heat) radiation did not prove too successful, because it frequently mistook sunlight reflected from clouds for enemy missile radiation. A human observer might not make the same mistake.

Granting this potential superiority of manned observers for such operations, we don't yet know how long man can live in orbit without deleterious effects on body or mind. There has been reason to fear that the isolation of space might produce hallucinations which could be disastrous for a mission intended to warn of enemy attack. Until the very recent Gemini space shots, no US astronaut had remained in orbit for more than a couple of days and Soviet cosmonauts who had stayed longer often experienced difficulties.

THE NEW REPUBLIC 11 September 1965 (9)

The Military Moves into Space

Unless military observers can retain their efficiency and rationality in orbit for periods of at least several weeks, the cost of maintaining a continuous manned space watch would probably be prohibitive, compared to other techniques for accomplishing the same objective. One of the primary purposes of the MOL experiments selected for 1968-70, will be to determine the effect of long space missions, up to 30 days, on man's body and spirit. MOL astronauts will live and work in a can 10 ft. in diameter and 41 ft. long. Air Force astronauts will conduct experiments to determine man's perception as a reconnaissance observer, his ability as a repairman of equipment and as an assembler of large objects in space, such as a telescope.

This is the extent of the program now authorized by the President. As such, it poses no direct military threat to the Soviets. But in view of previous USAF statements about the need to "control space," it would be surprising if the Russians don't conclude that there is more behind the project. The Air Force sees MOL as an opening wedge for an expanded military space mission and a means of counteracting its declining share of the defense budget. If MOL prompts the Soviets to expand their own military space effort, the USAF can cite this as reason to expand MOL, to give it the ability to maneuver in space and rendezvous with Soviet satellites to inspect them for possible "hostile intent."

Then will come the question of destroying or disabling such Soviet satellites. Four years ago Gen. Schriever put it this way: "Should a satellite be determined (by inspection) to be hostile, we must have a capability to neutralize it. If we cannot deal with such satellites, it is doubtful that our nation can continue to preserve its essential values." If the Soviets should follow suit, attempting to inspect and disable our military unmanned reconnaissance satellites, the Air Force will certainly seek approval to send up armed manned spacecraft to protect our satellites. This will set the stage for occasional space skirmishes.

It is, however, possible that MOL will demonstrate the feasibility of a few American and Soviet spacemen in their respective spacecraft operating a continuous space watch. If it does, and if both nations exercise restraint, it could have a stabilizing effect, as have our mutual unmanned reconnaissance satellites. If man can be an efficient observer in orbit for extended periods, the time may come when the US should invite the United Nations to maintain a continuous space patrol, with a multi-national crew, to warn of any impending or surprise attack.

RAYMOND D. SENTER

SATURDAY REVIEW, 11 Sept 65 (10)
What Goes On in the Sky?

ON VARIOUS occasions during the past year, President Lyndon B. Johnson has stressed the importance of continuity in United States foreign policy. One aspect of that continuity is now in question. We refer to the policy of President Dwight D. Eisenhower and President John F. Kennedy on the need to avoid a nightmarish danger of colossal dimensions to the American people and the world's peoples in general. This danger arose the moment man discovered he was able to liberate himself from earth's gravity and go cruising in space. For this development meant that space stations could become the orbiting carriers of atomic weapons, putting the entire planet under the nuclear gun.

President Eisenhower was the first to warn of this Orwellian horror. He spoke of the very real possibility of accident or miscalculation that could trigger an unspeakable holocaust. And even without accident or miscalculation, weapons in orbit would convert the sky into a grim canopy. Prime Minister Harold Macmillan fully supported President Eisenhower's declaration against nuclear weapons in space.

On coming to office, President Kennedy gave high priority to the need for effective agreements aimed at preventing military spacecraft from occupying outer space. Both through the United Nations and through direct negotiations with Premier Nikita Khrushchev, President Kennedy persisted with his effort to insure that space would be reserved for peaceful purposes. As a result, both the United States and the Soviet Union issued declarations of intent against military operations in space. The United Nations, on October 17, 1963, endorsed this action and called upon all other nations to be bound by it. Though the potential military use of rockets was inherent in the development of space technology, neither country crossed the line into military ventures. In fact, the space program in the United States had been deliberately put under civilian control, just as President Truman years earlier successfully fought to keep atomic energy development in nonmilitary hands. To be sure, the U.S. Air Force had been pressing for a prominent role in space development, but Presidents Eisenhower and Kennedy held to their contention that outer space should be out of bounds to the military.

The continuity of this policy has now been broken. On August 25, 1965, President Johnson announced he had authorized the Air Force to proceed with its plans for a Manned Orbiting Laboratory. While it was emphasized that the MOL would not be armed with nuclear firepower, the MOL nevertheless represents a specific military use of space vehicles. As such, it is a step toward the direct extension of the arms race into outer space.

What makes the matter all the more inexplicable is that no one has stated the case against military activity in space more cogently than President Johnson himself—in the very act of making the announcement about MOL. He did not make clear beyond a reasonable

doubt, however, why the MOL and also the involvement of the Air Force do not run counter to the United Nations resolution signed by the United States, or the policy of Presidents Eisenhower and Kennedy, or his own statement about the importance of preventing the extension of military technology into space.

If the principal opposing argument here is that the MOL will be unarmed, this may meet a technicality, but it does not meet the problem created by the fact that the door is now open to a long line of new developments in the field of orbiting laboratories. In past negotiations for arms limitation and control, the United States has properly emphasized the need for adequate inspection. Yet we have now taken the initiative in a field where inspection is most improbable and virtually impossible. For the Russians, inevitably, will now send up MOLs of their own, and there will be no way of knowing whether these spacecraft will be secretly armed with nuclear gun mounts. The very existence of such a possibility is certain to produce a clamor in the United States for armed space vehicles of our own. And the stage will be set for other nations to join the horror, cluttering up the sky with death-disseminating vehicles and blocking out man's vision of a rational world in which

to live out his life with reasonable faith in the sanity and decency of his fellow-man.

We pride ourselves on being an educated nation. But we have not yet learned the most fundamental lesson of the atomic age. This is the lesson that our safety and security no longer depend on the accumulation, multiplication, or refinement of force, but on the control of force. For the force cannot be used without destroying security, shattering freedom, and making a weird farce of claims for human uniqueness, human intelligence, human nobility. What will it profit us in the last instant of recorded time to know that we stood supreme among all the nations of the world in the variety, multiplicity, efficiency, and sophistication of the force that figured in the final holocaust? Inherent in our history are higher distinctions. The time in which to put those distinctions fully to work grows short. —N.C.

SPACE RACE AS DEFENSE PROBLEM

President Johnson has now committed this country to a vital and far-reaching race against Russia for military supremacy in space.

It is a strategic decision regarded as important as any since World War II.

The race actually has started. At this point it is largely silent and secret. But both powers are known to be conducting military missions with unmanned satellites, and results are described as striking and enormous.

Next, both countries will make major strategic moves by putting up space stations with military crews. Beyond that, plans are being readied for armadas of orbiting platforms and fleets of space planes—and, in case of hostilities, possible confrontation in space.

The U. S. goal: to make certain Russia is denied control of space that might enable it to tip the balance of power here on earth.

A year or so ago, the whole idea was considered "fantastic" by some of the President's closest advisers. Some skepticism and opposition still remain.

But by midsummer of this year, Mr. Johnson became so convinced of a growing Soviet space threat that he ordered the Air Force to build a series of manned orbiting laboratories—each is called an MOL—as "insurance." It was a big step in moving space defenses from the realm of fantasy to actual operations. Suddenly, it became recognized that space is a defense problem.

The inside story. What follows is the story behind the President's key decision, the reasons it was made—and what is to come of it.

First off, the MOL decision was a victory for military men who, since the start of the space age in 1957, have insisted that the value of space power will inevitably transcend that of air power today. They argued that Russia, recognizing this, was devoting its main resources to military mastery of space.

Arrayed against the Pentagon from the start were White House advisers who felt U. S. space efforts should project a peaceful image. President Eisenhower was convinced they were right. The space Act of 1958 stressed that point and created a civilian space agency to handle man-in-space projects.

Military astronauts were put under the new agency, military programs were put in mothballs or scrapped, and experts like Dr. Werner von Braun and his Saturn-rocket program were removed from Pentagon control.

President Kennedy went a step further. In 1961 he chose the moon, rather than strategically important areas closer to earth, as the nation's main space goal. He set up a moon-landing program at a cost of more than 20 billion dollars.

In this period, civilian space spending rose to 5 billion dollars a year while spending on military programs was held to 1.5 billions, largely for unmanned systems. Robert S. McNamara, Secretary of Defense, made clear he was willing to invest in productive unmanned satellites, but not in a manned military program. The manned Dyna-Soar space-plane program was canceled

and, according to his critics, Mr. McNamara inhibited development of other new man-in-space projects.

Then, two things happened:

1. Exciting progress was made in the Gemini civilian program. Man proved he could endure the physical hazards of space and function efficiently. He also showed he could maneuver his spacecraft and thus paved the way for rendezvous of vehicles in space. This convinced many skeptics that military operations could be carried out in space if a country wanted to invest the time, money and resources.

2. It became clear that Soviet Russia was less interested in racing to the moon than it was in first developing spacecraft for operations 100 to 600 miles above earth. The entire Russian space program, run by Soviet generals, showed itself to be military in nature—its boosters, communications, tracking stations, telemetry, radar, launch sites, pilots and strategy.

On top of that, results described as nothing short of amazing started flowing from the unmanned satellites. Scientists concluded that manned satellites could do an even better job. Russia gave indications that it was moving quickly into the field of manned platforms to take advantage of a lead in that area.

Those facts were assessed in this country, with these results:

Secretary of State Dean Rusk, long concerned over Soviet military activities in space, convinced others at the State Department that the time had come to abandon opposition to a purely U. S. military program, despite possible propaganda setbacks around the world.

Secretary McNamara, with the same evidence in hand, qualified his own opposition. President Johnson had been reluctant to go ahead with MOL without Mr. McNamara's support. On August 25, the decision was announced to put military men in space.

The practical results of that decision, as seen by space authorities:

America's civilian race to the moon will continue, consuming 5 billions a year until accomplished in 1969. But ambitious civilian plans to go beyond the moon are being reconsidered.

A landing on Mars—estimated to cost up to 100 billion dollars—has been scrapped for the present. That was to have been the big goal after the moon.

Instead, military spending will start going up. Later in this decade, experts believe, the two programs will even out.

What's at stake in space for the military? To get an answer, you first must investigate what is now being done, and then consider the plans for the future.

Behind a wall of semisecrecy, a half dozen major military-satellite programs are now under way in the U. S. The Air Force has launched 150 satellites from Vandenberg Air Force Base in California. In the past two years, 80 per cent of all U. S. payloads have been military in nature. Among them:

SAMOS. These photo-intelligence satellites have exceeded all expectations, keeping the U. S. informed of Soviet missile sites, nuclear progress in Red China and Communist troop movements in both countries. They parachute back pictures with 1,000 times the resolution of standard TV images.

MIDAS. After an uncertain start, Midas infrared detectors are now able to detect Soviet rocket launchings by picking up telltale exhaust gases and translating them into electronic signals.

SPACE RACE ... Cont'd

FERRET. This is a version of Samos, equipped for electronic intelligence and communications eavesdropping. It is said to be useful for monitoring radar and radio traffic near Russia's major rocket-testing sites, tracking down coded or scrambled transmissions and relaying them to U. S. listening posts.

Other satellite systems are proving equally useful. The Pentagon has "borrowed" the civilian-developed Syncom to speed military traffic to Vietnam. Transit satellites are furnishing missile-carrying Polaris submarines with precise navigation. Four Vela satellites—equipped with radiation detectors—are in orbit to make certain that Russia cannot, undetected, break the nuclear-test ban in space.

Russia's faster pace. Russia is gaining ground on the U. S. in unmanned satellites, may even be ahead where "spy-in-the-sky" satellites are concerned. The Soviets are expected to launch more than 60 Cosmos satellites this year—twice the rate of a year ago.

According to U. S. authorities, the Russians are making heavy use of their Cosmos camera-satellites to chart the exact co-ordinates of every U. S. missile site in the U. S.—the kind of information they are finding it difficult to get from spies on the ground.

Mr. Johnson's decision on MOL means that in 1968 the U. S. will be putting two men into space aboard a trailer-size station for 30 days at a time. It is a 1.5-billion-dollar project to find out just how well man can carry out military missions in orbit.

No nuclear weapons will be aboard. Using space as a launching area for H-bombs has never carried much weight with U. S. military men. They believe that job can be done much more effectively with missiles on the ground.

What the Pentagon has in mind is a number of other missions. Some are listed in the chart on the preceding pages. Others include the feasibility of putting communications and navigation systems in space, under direct control of man, to survive nuclear attack on earth. One project will be for astronauts to leave their ship and assemble radar antennas perhaps 100 feet across.

Soviet head start. Russia is expected to be putting up manned space stations before the U. S., with even more ambitious missions in mind. If the signs are being read correctly, the Soviets have the means to orbit, not two men at a time, but six to eight. That superiority is based on a long-established lead in rocket power. Soviet cosmonauts, in flights to date, have passed over the U. S. almost 100 times. And experts point out that the Russians, who have been boasting about orbiting supermegaton bombs over the same routes, will soon have the rockets to do it.

Ten years from now— U. S. military men whose job it is to plan ahead are already looking beyond MOL, laying out requirements for any possible space battlefield of a decade or two hence.

What is now envisioned are giant "national space platforms" at the center of military operations, directing fleets

of interceptors and destroyers, rescue and logistic vehicles. Each platform would carry 10 to 20 men, stay up for

months and possibly years.

While Russia may proceed with H-bomb platforms, U. S. planners are considering a more advanced retaliatory counterthreat—using futuristic lethal energy and light-wave weapons to create destruction over enemy targets below.

Those are "far out" plans. Air Force planners make that point themselves. Many of the technical problems have not been solved and some may prove

insoluble. But this is the main point military men make: One-sided control of space could destroy the balance of power on earth and prove catastrophic if it is the Russians who make all the big strategic breakthroughs.

It is that deep-rooted concern that lies behind the planning and scrapping by the Air Force to overcome lingering skepticism in this country over the need to put military men in space. [END]

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MONDAY MORNING 13 SEPTEMBER 1965

M.O.L.: The New Arms Race in Space

By HARRY SCHWARTZ

President Johnson's order to the Air Force to develop a manned orbiting laboratory (M.O.L.) has provoked relatively little public discussion, in part because its announcement was overshadowed by the historic flight of Gemini 5. But historians may yet conclude that politically and militarily this Presidential decision was even more important than the Cooper-Conrad feat.

The President's M.O.L. announcement came at a time when the Soviet Union was publicly attacking Gemini 5 as primarily a venture in military espionage. Just why the President chose precisely that time to supply the Russian propagandists with supporting ammunition is still a puzzle.

Joint Effort Dim

Moreover, by underlining the potential military significance of space, the President may have finally ended any last lingering hope that there might be a joint Soviet-American program for sending a man to the moon or to some more distant objective in the solar system.

Most serious is the indication that the Soviet Union and its allies have interpreted the M.O.L. decision as the American signal for an arms race in space.

Immediately after the Pres-

idential announcement, several Eastern European newspapers warned that the Soviet Union could hardly fail to try to get similar military capability in space. Then last week the deputy commander of the Soviet Union's rocket troops denounced the M.O.L. as a means of bringing American atom bombs into space.

Arms Race Inevitable

One school of thought argues in effect that an arms race in space was inevitable from the beginning. It holds that the Soviet program has always aimed at maximum military space capability, and that the United States has been delinquent in delaying its own response so long.

The tight secrecy surrounding the Soviet space effort lends some credence to this argument, but in the public domain at least it is the United States that has now become the first to declare it wishes to develop an extraterrestrial military capability. Those who would have preferred a longer effort to keep space as a zone of peace can question whether the arms race now starting may not detract from American security, rather than increasing it.

Now the United States and the Soviet Union regularly have camera-equipped satellites in orbit. These supply Moscow and

Washington with enormous amounts of information about what is going on aboveground all over this planet. This is the practical realization of President Eisenhower's old "open skies" proposal. The United States is the net gainer in this exchange.

Air Force proponents of the M.O.L. have argued that this line of research will ultimately permit this country to inspect and destroy hostile satellites such as the Soviet spy sputniks. But by the same token similar Soviet development will permit Soviet spacemen to destroy the American automatic cameras in the sky. Then when all unmanned espionage satellites have been made inoperative, the question will arise of trying to force the other side's manned craft out of space, since these vessels will also be equipped for both automatic and hand cameras.

In the face of such dangerous possibilities, it is arguable that the United States should have tried to freeze the present situation.

The same problem arises in respect to other proposed military uses of manned space-ships. Thus some Air Force sources speak of using such craft as space command posts to direct military operations on earth. But will not such com-

mand posts be prime targets of enemy space vessels in the event of terrestrial conflict? ..

Alternative Suggested

These reflections suggest an alternative path. There are many non-military uses for a manned orbiting laboratory that could serve the needs of astronomers; meteorologists and other scientists. Would it not have been better for the National Aeronautics and Space Administration to have been given the M.O.L. assignment and thus avoid the provocation and propaganda setback represented by the decision the President actually took? And once a NASA M.O.L. were developed, it could be used by the military if the need arose. That need would presumably be evidence that the Russians or others were actively exploiting space for military purposes other than intelligence collection. Such a course might have kept Washington from bearing the onus of seeming to start an arms race in space, while giving more time to exert pressure on Moscow for cooperation rather than rivalry in the new dimension of human activity.

HARRY SCHWARTZ is a member of the editorial board of *The Times*.

CIA Control Bid Slowed Decision on MOL

Battle with USAF over responsibility seen main delay cause; science experiments may be shifted to NASA.

By Donald E. Fink

Washington—Long delay in the decision to proceed with the development of the military manned orbiting laboratory (MOL) was caused by a fight between Air Force and the Central Intelligence Agency over which would exercise system mission control.

MOL now is conceived primarily as a reconnaissance/surveillance payload (AW&ST Sept. 6, pp. 17, 22), and the battle apparently centered around whether the vehicle would be a successor to the U-2 and under CIA control, or to the Samos reconnaissance satellite and under Air Force management.

It had been believed that the MOL decision delay had been sought by the State Dept., which wanted to sound out the effect on U.S. allies of a manned reconnaissance system (AW&ST July 26, p. 15).

This State Dept. survey was relatively brief, however, and the delay of several

months was caused instead by the mission control argument.

The White House appeared to rule in favor of the Air Force by announcing the program late last month after key USAF leaders, headed by Under Secretary Brockway McMillan, interceded.

With Air Force apparently in control, and with MOL rapidly being viewed as a Defense Dept. intelligence-gathering satellite, a move has begun within the Air Force to offer all scientific experiments previously proposed for MOI to the National Aeronautics and Space Administration. The proposal is that NASA fly these experiments in its Apollo extension system (AES) program.

To obtain the best operational results, extremely high inclination orbits are being planned for MOL, with some missions set for 85 to 92 deg. angles. Circular 300 mi. orbits had been considered, and may be flown on some missions. But for the best ground resolutions, the orbits will be held to 150-160 mi.

The transtage will have to be used regularly to compensate for natural orbital degradation. Orbital periods will be about 90 min.

Preliminary studies show the maximum laboratory payload will be 5,600 lb. Electronic and photographic sensors will be used, and the data will be relayed to the ground by digital data transmission or 6-mc. bandwidth television—comparable to commercial television.

Two ground receiving stations will be used.

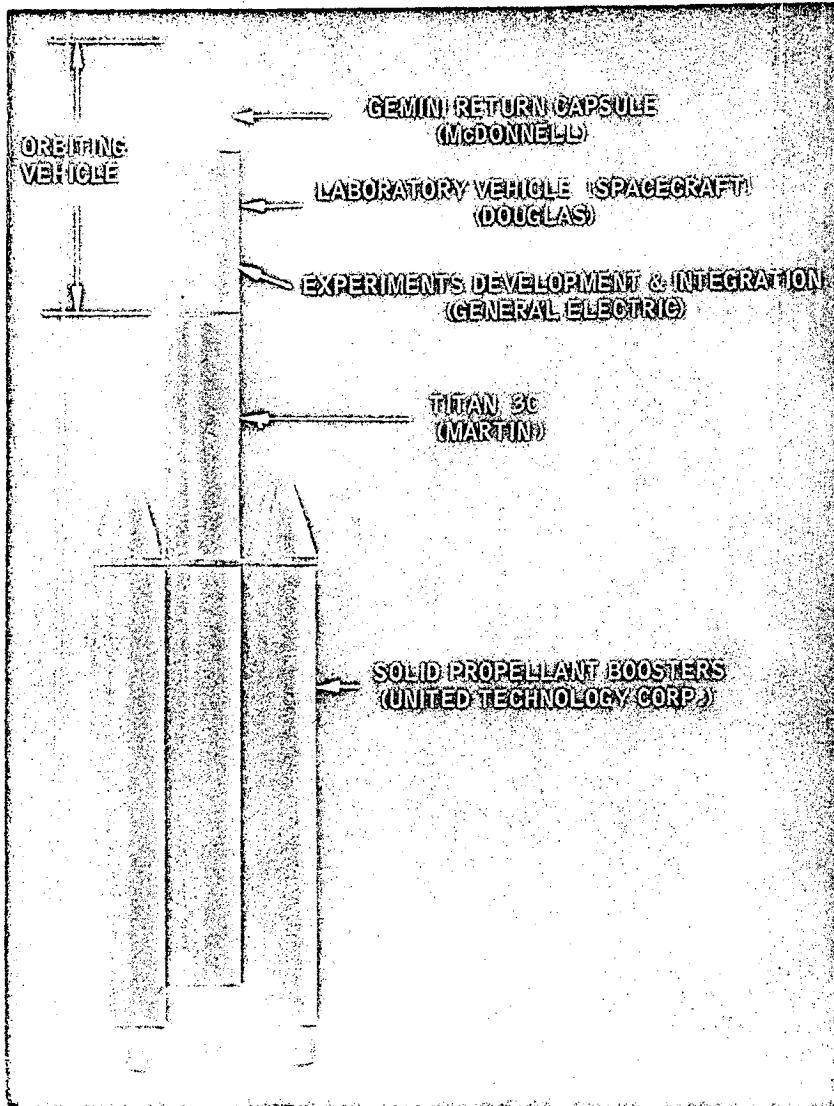
The problem of keeping the television channels secure still is being studied, but it is felt that since the transmissions will be line-of-sight, there should be no major difficulty in guarding against interception antennas.

Mission planners do not consider it necessary to include use of ejected photographic capsules, since the television will permit transmission of fairly high-resolution pictures.

Sensors being considered for use on MOL include low-light level television, zoom lens attachments for the television system, L-band high-resolution radar, long-lens photographic systems and also a variety of electronic ferret devices.

Power requirements for a 30-day mission have not been fully determined. It is felt, however, that fuel cell systems drawing on the technology developed for Projects Gemini and Apollo will suffice for all MOL missions.

The number of reconnaissance tasks developing for the two MOL crewmen is prompting supporters of a strong operationally oriented program to play



USAF MANNED ORBITING laboratory system in its launch configuration shows the five associate prime contractors and areas of responsibility. Negotiations with these contractors is in the final way. Program cost is estimated at \$1.5 billion.

down the scientific aspects. Thus the approximately 26 scientific experiments proposed for the MOL flights, may be offered to NASA for its AES program missions.

There will be a considerable amount of experimentation in early missions to further MOL technology and evaluate man's performance in space. In addition, the two crewmen will be kept quite busy operating the sensor systems and classifying targets and are not expected to have much time for scientific experiments.

MOL planners think one man can seek out and locate at least 1,000 targets per orbit with the sensors, but the classification by the second crewman is expected to be quite time consuming. Air Force plans to conduct numerous mission profile studies in an attempt to develop the technique through which a MOL reconnaissance system would function.

The Navy, which is participating in MOL through the P-13 ocean surveillance experiment, has done some mission simulation studies to determine what workloads would face a two-man crew attempting to locate and classify ocean traffic on a global basis.

The ocean surveillance mission may be extended to include anti-submarine warfare (ASW) applications. For ASW

work, the crewmen would operate sensors that are compatible with the anti-submarine network of sonobuoys, surface ships and aircraft.

The Navy is reported to be somewhat apathetic about its role in the MOL program, which raises the possibility that Air Force may take over the ocean surveillance mission. Air Force has argued that surveillance over ocean and land are essentially the same, and that the P-13 experiment can be handled as an integral part of the Air Force mission.

The first MOL spacecraft are scheduled to be discarded after use and allowed to burn up upon re-entry. Mission planners feel, however, that if the program is to be truly open-ended, they must be able to re-supply the vehicles for extended flights beyond the currently-planned 30 days.

For this reason, all laboratory design considerations are including Gemini docking ports leading into the unpressurized section of the canister. These would be used by ferry vehicles bringing re-generation units for the life support system and perhaps eventually new crews.

Several rendezvous schemes are being considered. Based on the experience with Gemini rendezvous simulations, the approach to the MOL vehicle prob-

ably can be made visually. A variety of distance measuring devices, including Doppler radars and Mossbauer radiation counters, are being considered for the final portion of the docking maneuver when the crew's visibility will be obscured.

Air Force contract negotiation teams currently are working with Douglas Aircraft Co. and General Electric Co. to define their respective areas of activity and shares of the \$1.5 billion contract. One industry official described the situation as "chaotic" and said it would be some time before the relationships between the five associate prime MOL contractors are defined fully.

Douglas is expected to be primarily involved in the construction of the laboratory and monitoring installation of equipment and experiments. General Electric's area of responsibility may include development and integration of experiments, pre-launch and post-launch mission support and final data analysis.

Numerous spacecraft design details have yet to be worked out for MOL. These include: the type of cabin atmosphere that is to be used—Douglas appears to favor a helium-oxygen mixture that could permit cabin pressures up to 7 psi.; what environmental control system will be used, and whether or not a new fuel cell system will be required.

Economizing Blamed for Army Shortages

Washington—Only three of the Army's entire force of 16 active divisions considered themselves capable of going into combat within 30 days as of the close of last year, and the low state of readiness is blamed on Pentagon economizing, the Senate Preparedness Investigating Subcommittee charged in a report sent to the Defense Dept. for comment.

Defense Secretary Robert S. McNamara and Army leaders in official testimony have belittled the shortages alleged by the subcommittee. However, these are among the subcommittee findings which lie behind the alarm of committee members about the Army's state of readiness:

- **European forces.** The 7th Army in Europe rated all its five divisions in the lowest category of readiness as of Dec. 31, 1964—Category C-4. This C-4 category is defined by the Army as "not capable of conducting combat operations—requires more than 30 days to attain C-1." The C-1 category set as the objective for the 16 active Army divisions is defined as "fully prepared for and capable of undertaking sustained combat operations within 24 hr."

A major reason for this lowest category of readiness was not shortages of minor items like rulers and manuals—Pentagon inferences to this effect notwithstanding—but the lack of aircraft, vital spare parts and assemblies, like transmissions. The commanders in the field told subcommittee investigators that these shortages were critical.

The 7th Army comprises the 3rd and 4th Armored Divs., 3rd and 8th In-

fantry Divs. and the 24th Infantry Div. (mechanized). McNamara and Army leaders have been trying to improve the 7th Army's state of readiness since the subcommittee survey. Some improvement has been made, but not enough to calm subcommittee fears. Commanders told the subcommittee the high priority for Vietnam needs is causing many of their equipment shortages because the Pentagon "robs Peter to pay Paul."

- **U.S.-based divisions.** All but two of the eight active divisions based in the U.S. were rated C-4 at the end of calendar 1964. Army leaders—when asked about this by the subcommittee—claimed that the readiness ratings were artificial in some situations. Although the 82nd Airborne Div. at Ft. Bragg, N. C., and the 101st Airborne Div. at Ft. Campbell, Ky., were rated

C-4, the Army leaders said this was because their table of organization and equipment (TOE) was changed. The Army said this was done to lighten the divisions so they were easier to airlift and would have equipment tailored for an enemy like the Viet Cong rather than a modern force like Russia's. The Army said the quick response of the 82nd Airborne to the Dominican Republic crisis showed its actual readiness.

The two U.S.-based divisions which were above the C-4 rating were only C-3, defined as "limited capability to perform combat operations and only for a short period. Can attain C-1 in 30 days." The Army has been improving the state of readiness of the seven U.S.-based divisions since the subcommittee's Dec. 31, 1964, survey—but the desired C-1 rating still is far from being achieved.

In addition to the 82nd and 101st Airborne Divs., the continental U. S. Army divisions as of last Dec. 31 are: 1st and 2nd Armored, Ft. Hood, Tex.; 1st Infantry Div., Ft. Riley, Kan.; 2nd Infantry Div., Ft. Benning, Ga.; 4th Infantry Div., Ft. Lewis, Wash., and the 5th Infantry Div. (mechanized), Ft. Carson, Colo., and Ft. Devens, Mass.

- **Pacific readiness.** Among the Army's Pacific forces, comprising the 25th Infantry Div. in Hawaii and the 1st