

AERONAUTICS

Man-Made Moon Possible

Once in position, gravity would keep it going. Could be used for television recording of enemy territory, measurement of cosmic rays.

► IT IS no secret that there has been serious consideration of the launching of an artificial "moon" of the earth, both for warfare and peaceful purposes.

There is no question that it can be done, given time, brains and money. The United States government was working on plans as early as 1945, as testimony at the New York atom spy trials made clear. But the Nazis had such a man-made satellite of the earth on their drawing boards. The Soviets, building on German captured information, hardly needed the espionage information they are supposed to have received to start them off on such a project.

In 1949 the annual report of the late Secretary of Defense Forrestal definitely mentioned an "earth satellite vehicle program."

One of the most attractive features of the satellite is that once it is projected into its position, by high-powered rockets, it would continuously circle the earth. And no fuel would be needed to keep the satellite circling the earth, just as the moon needs no power or fuel to keep going.

It would travel gravitationally at the same speed as the earth's surface beneath so that it would seem to stand still at one spot over the earth's equator.

The tiny object, much smaller than the moon of course, could be radio equipped and might have jet or rocket motors that would allow those on earth who gave birth to it to have some control over it even after it had been sent forth as an artificial heavenly body.

The big job will be to design the rockets sufficiently large and economical to allow the launching of the "space-platform," and projecting it safely and successfully into the proper position. This would take much larger rockets and higher speeds than have yet been achieved.

The extensive rocket research and testing, at White Sands, N. Mex., and elsewhere, is aimed undoubtedly at this development as well as rockets for sending atomic bombs over long-range earthly distances.

Perhaps speeds up to 10,000 to 20,000 miles per hour would be needed to defy the gravitational pull of the earth sufficiently. This would be most likely achieved by use of a multiple stage rocket, with the third one set off at about 300 miles up.

The distance above the earth for such a satellite would be about a minimum of 600 miles and might be thousands of miles. The size of the object would probably need to be relatively small, a few dozen

feet in diameter, at least in the first attempts, because of the energy needed to project very much weight away from the earth. But there has been talk of relatively large "platforms" for eventual use, once such a satellite was demonstrated to be practical.

Military suggestions are that the satellite might be a launching point for atomic bombs and other weapons, but this would appear to be relatively fantastic and uneconomical compared with long-range bombers. There may be psychological value to an enemy controlling an artificial moon over our heads.

AERONAUTICS

Better Air Control

► TRAFFIC control on the 70,000 miles of aerial "highways" criss-crossing the United States is now relatively effective with the use of modern electronic equipment, it was indicated by D. W. Nyrop, U. S. Administrator of Civil Aeronautics.

One of the big jobs of the Civil Aeronautics Administration, of which Mr. Nyrop is head, is to aid all types of planes to travel with relative safety along these airways, to reach their destination and make safe landings in all types of weather. He spoke as a guest of Watson Davis, director of Science Service, on Adventures in Science, heard over the Columbia network.

These aerial highways are numbered much like those for automobiles on the surface. They are uniformly ten miles wide. Each airway is a "multiple highway" system, he said, with separate "highways" one above the other at 1,000-foot intervals. Traffic along them, like traffic on the ground, follows the rule of "keep to the right."

Pilots of private planes can travel where they please in good weather when they can rely on their own vision to prevent collisions and other hazards. When bad weather closes in, all man-made things that fly, from small personal planes to superliners, move along these aerial highways.

The new omnirange system, now rapidly being installed throughout the nation, provides radio beams for pilots to follow. Unlike the older system it is replacing, it sends out guiding beams in all directions. They are very high frequency beams which are free of static interference. Many of

The man-made satellite could be used for observations, even automatic television recording of what is happening in an enemy country.

But the scientific uses of such an observation point in space, sending back radio reports from its automatic instruments, might far outweigh any military use. It would measure cosmic rays, observe the sun, chart the extremely rare gases in outer space and give us other information completely unobtainable from the surface of the earth.

Television might be sprayed over the whole earth from a series of such satellites that would receive and reflect radio waves from earthly stations. It was figured out that seven such man-made satellites spaced above the equator at an altitude of 4,000 miles could do the work of 1,500 surface television and FM radio stations needed to cover the entire United States.

How much money for an artificial moon? A billion or even a half billion dollars should give us one of them.

Science News Letter, March 24, 1951

them are now in use. A total of about 400 will soon blanket the entire United States. The omnirange will be standard airway range equipment after 1954.

Important also in traffic control are 30 stations which, together with some 200 airport control towers, keep track of planes in the air. In bad weather, pilots file flight plans before the takeoff. During flight they keep in touch with the control centers by radio. They follow flight instructions issued to them by the operators of the centers.

Science News Letter, March 24, 1951

ZOOLOGY

GI in Korea Sends Snakes to Smithsonian

► KOREAN secrets of nature are being disclosed by amateur scientists among the GI's fighting the Communists. One, Corp. William E. Old, Jr., Norfolk, Va., has sent back to the Smithsonian Institution a collection of little-known reptiles of the region.

Smithsonian experts explain that Korea has, in the past, been inadequately covered by zoologists. Corp. Old's collection may prove to have in it species hitherto unrecorded from Korea.

In a bomb-blasted schoolhouse, Corp. Old came across a small collection of reptiles, skilfully preserved in alcohol and well labeled, evidently by a native schoolteacher. It would have become part of the rubble of war if Corp. Old had not sent it to the natural history collection at the Smithsonian.

Science News Letter, March 24, 1951