

ROCKETS AND MISSILES

Vanguard Studies Show "Mumetal" for Satellites

SPECIAL magnetic-shielding metals have been suggested as rudders to help guide man-made satellites in their flights through space.

Studies of the flight of Vanguard II, launched almost a year ago on Feb. 17, 1959, showed that its rotation was being slowed down at an extremely rapid rate, Dr. Raymond H. Wilson Jr. of the National Aeronautics and Space Administration reported in Washington, D. C.

An explanation for this is seen in the fact that the permanent magnets in this satellite were each surrounded in all except one direction by magnetic shielding of "mumetal" or other high-permeability material. This material would ordinarily experience an extremely high binding force or couple with respect to a rotating magnetic field such as the earth's, Dr. Wilson explained.

In fact, he said, if the mumetal had not been well-saturated by the magnets inside Vanguard, the satellite's rotational motion would have been completely left to the "local vagaries of the earth's magnetic and gravitational fields" after about one day.

This remarkable sensitivity of highly permeable magnetic material to its surrounding field suggests its possible use for controlling the orientation of satellites, Dr. Wilson concluded. The Vanguard results show that if the satellite's outer shell had been of mumetal, it would have become directionally "locked" in the earth's field within one second.

The NASA scientist suggests that properly designed and placed rings of mumetal could be used as rudders in addition to the more complicated gyroscope devices for controlling the direction of space observatories.

Details of the study appear in *Science* (131, 223, Jan. 22, 1960).

Science News Letter, February 13, 1960

PUBLIC SAFETY

AEC Recovers 569 Radioactive Watches

A TOTAL of 569 of those wrist watches suspected to be radioactive have been discovered and returned to the American distributor in New York City.

Last Dec. 17, the Atomic Energy Commission announced it and the American Rolex Watch Corporation were taking steps to recover 600 Rolex GMT-Master wrist watches imported from Switzerland and sold in this country between October, 1956, and November, 1959. A number of these watches were purchased abroad by United States citizens and brought back to this country.

Of the 569 now returned, 432 were found to contain radioactive strontium-90 in markings and numerals. The company is replacing all such bearing parts and returning the watches without charge to the owners, a statement from the Atomic Energy Commission revealed.

Two hundred thirty of the 569 recovered watches were originally sold in the U. S.

Science News Letter, February 13, 1960

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