U. S. NAVY TO USE GERMAN WEAPONS

Technical Mission in the Reich Reaps 'Fairly Rich Harvest' of Secret Developments

Special to THE NEW YORK TIMES.

WASHINGTON, June 29—Commodore Henry Adrian Schade, head of a 200-man naval technical mission to Europe, said today that "we are reaping a fairly rich harvest" of German technical developments that the United States Navy would be able to employ in prosecuting the war against Japan.

He said "we have a very high opinion of German technical ability," but that it could not be conceded that in general the Germans had advanced farther than the Americans. "It is a matter of emphasis," he commented.

He cited the V-weapons as one field in which the Germans excelled. He said that the German High Command, for some reason, believed great emphasis should be placed on them while others believed it had been overdone at the expense of aircraft and other production.

On the other hand, he said, he had "heard a good many expressions of admiration from German naval officers for our amphibious developments." He said the German Navy was not amphibious-minded.

Commodore Schade, in a news conference, said that the treatment of the German Navy was "resented" by a good many German naval officers. "They feel that the navy did not receive a chance to develop," he declared. "The people in power in Germany were not in sympathy with the Navy. Practically all interest was centered on submarines. There was little interest in developing large-sized surface ships. The German Army received preferential treatment. In fact, the navy was under the army administration."

Answering reporters' questions, Commodore Schade said he did not think there was anything new in German gunnery, "but it was very good"; that they had excellent torpedoes and mines, and their E-boats were very fast. The E-boats are longer than our torpedo-carrying PT-boats, but of the same general type, he said.

The Germans, he said, "had a large development program under way that had not come to fruition," adding that "we are getting some of that." He said that their principal accomplishments were in the fields of rockets and jet-propulsion, and he conceded that "in six months there would have been quite a few new weapons in use by the Germans."

The officer declared, however, that they would not have altered the decision or delayed the end for any great time but would have made our victory tougher to achieve.

In the five years that their technological developments have been a closed book to us, the Germans made "tremendous strides" in synthetic fuel and lubricants, he said. Aviation gasoline was produced from coal.

Commodore Schade's mission is operating in the American and British zones of occupation. He is a native of St. Paul, Minn., and was graduated from the Naval Academy in 1923. He received the degree of Master of Science from Massachusetts Institute of Technology in 1928 and pursued advanced studies at the Technische Hochschule in Berlin from 1935 to 1937.

'SUN GUN' WEIGHED BY GERMAN IN 1929

Spatial Observatory and Value In War Also Was Discussed in Article by Engineer

German plans and descriptions for the construction of a spatial observatory and a giant floating sun "gun" thousands of miles in the air were contained in a series of three articles that appeared in a popular American scientific periodical published sixteen years ago, it was discovered yesterday. The articles were written by Capt. Hermann Noordung, A. D., M. E., a German engineer and an authority on mechanics.

In many respects the articles confirmed the disclosure printed in THE NEW YORK TIMES yesterday that German scientists were working on the problem of harnessing the sun's rays for war purposes. In addition, they revealed that German engineers and research workers had made rapid strides in research on rockets and on the whole subject of space flying from an engineering standpoint. Furthermore, the articles suggested that German scientists were considering the use of the spatial observatory in carrying out special physical investigations.

Captain Noordung's work was first discovered in an obscure German magazine in 1929 by Hugo Gernsback, an American publisher. Obtaining the American translation rights, Mr. Gernsback published them in the July, August and September (1929) issues of his magazine, Science Wonder Stories.

Much of the material for these articles was taken from a German pamphlet published between 1927 and 1929. The pamphlet contained crude illustrations, which were redrawn before publication in the magazine here.

Spatial Observatory Plans

After a preliminary discussion of the physical problems involved in living and working in space in a "weightless" condition, the author turned to a description of the manner in which the spatial observatory would be arranged.

The structure and equipment would be constructed on earth and the units would then be taken by space ships into space for reassembling. They would be airtight and would be equipped with devices similar to those used on submarines and caissons. Heat and power would be supplied by the rays of the sun through a sun power plant.

Finally, special rotary motors and recoil devices would turn the observatory in any direction and control its motion as necessary. By this means the observatory would be kept in the desired relation to the earth or in the necessary position with respect to the sun's rays.

As visualized by Captain Noordung, the whole spatial structure would be in three parts—a rotary residence house, the observatory proper and the engine house. These would be located in space about 22,350 miles from the earth.

Rocket space ships would be used to travel to the observatory. Presumably the Germans would have used the knowledge they acquired in developing the V-2 weapon and the rocket-propelled plane in perfecting this means of transportation.

"Sun Gun" a Feature

To Captain Noordung one of the most important possibilities of an observatory in space was the part it could play in war. He foresaw the construction of a giant mirror a few hundred or thousand meters in diameter, made out of sheet sodium, framed in a circular wire network and rotating in space. This mirror, he believed, by focussing the rays of the sun, would provide a weapon "far surpassing in frightfulness everything thus far used."

"And," the author wrote, "assuming that the observer in space, with the aid of his mighty telescope, saw spread out before him the entire field of battle, with the country behind the lines of the enemy, with all his routes of approach by land and sea—all this like a gigantic map showing even the smallest details. Then we can form an idea of what such a spatial mirror, guided by his hand, would mean as a weapon."

"With such a mirror munitions dumps could be blown up, weapons of war melted, factories and cities burned and troops on the march carbonized. The article added: "And the ships of the enemy, no matter how powerful they were or how strongly fortified the harbors in which they sought refuge, could not possibly be protected from it. These would be actually the rays of death."

THAT GERMAN SKY ISLAND

Physicists naturally raised a skeptical eyebrow when they read yesterday of German plans to transport to a point 5,000 miles distant a "platform" on which a mirror nearly two miles square was to concentrate the sun's rays on the earth, drive engines and even "make the ocean boil" in places. The only man who is supposed to have done anything like this is Archimedes, but no scientist takes seriously the tale that he burned the Roman ships by which Syracuse was beleaguered with solar mirrors. We suspect that the theorists who developed the formidable V-2 rocket indulged in some romantic and exciting work—what is politely called "extrapolation" in engineering.

To reach a point in space 5,000 miles distant a rocket of colossal dimensions would be necessary, because there is no air in interstellar space for a propeller to bite. Both Oberth and Hohmann suggested years ago that "islands" could be planted between the earth and the planets to serve as filling stations for rocketeers bound for Mars —evidently the origin of the German conception. The islands would revolve around the earth as a satellite, and it would be no mean navigational feat to find it. Such an island would not be completely immune to the influence of gravitation, as the accounts that came from Germany maintained. Gravitation cannot be neutralized. The asteroids, some of which are about the size of the German artificial dream island, would hardly follow their regular orbits around the sun if they were not subject to gravitational pulls. Nor would there be a solar system. Unable to retain any air by gravitational attraction, the island would be a dreary spot on which the mirror-keeper and his terrestrial visitors would have to wear oxygen masks. Nothing is said about the temperature. Unless the island were completely enclosed, built on the vacuum-bottle principle and air-conditioned, the sun's heat would be intolerable by day, and the night (if there could be a night on so small a body) would be cold enough to freeze hydrogen.

The sodium mirror is a puzzle. On the earth sodium is kept under kerosene or some liquid that contains no oxygen; otherwise it would be reduced to caustic soda. Other more easily handled metals would serve as more practical reflectors. Even if we accept a sodium mirror nearly two miles in area, we doubt if it would have the blistering effect predicted. Radiant energy follows the inverse square law, so that by the time a reflected solar beam reached the earth the effect could not be great.

The Germans conceded that their space-island would have to wait for another century or so. There is reason, therefore, to believe that the rocket experts were merely dreaming over their Ersatz beer. It is not likely that scores of scientists and technicians stopped work on the V-1 and V-2 rockets to perform time-consuming calculations and prepare the necessary working drawings for one of the most daring inventions ever conceived. There was a war to be won, and a sodium mirror in the sky could not win it. Yet this boldness of thinking is the kind of thinking that made rockets the greatest innovation of this war.