ELECTRONICS

How Radar Saved England

It detected hostile warships from aircraft, warned of the approach of enemy aircraft, and defended harbors and coasts against small enemy vessels.

➤ HOW RADAR saved England from Hitler in the 1940 Battle of Britain and later from rocket bombs, the close cooperation of Great Britain and the United States in the development of radar even before Pearl Harbor, and the part played by radar in the air forces, on shipboard, and particularly in clearing the Atlantic of Nazi submarines, are revealed by the British Information Services.

The detection of hostile warships from aircraft, the warning of the approach of enemy aircraft, the defense of harbor and coasts against small enemy vessels, the feeding of gunnery data to predictors from "radiolocation," or radar equipment, the control of searchlights to illuminate aircraft targets, all these, the report states, were accomplished facts by the outbreak of the war in September, 1939. Outstanding improvements were, of course, made later.

The Battle of Britain, in 1940, was the turning point in the war, and it was the highly advanced system of coastal radar stations, begun in 1935, that made the victory possible, according to the report. These stations covered the east and south coasts of England. The Germans were unaware of their scope and accuracy. Nazi bombers taking off from France were watched by English radar throughout their entire flight no matter how roundabout their route. The advance information relative to the size of Nazi air squadrons and their routes is responsible for their defeat.

As the science of radar advanced, it was found possible to design complete stations so small that they could be fitted into an aircraft. They were at once installed in night fighters with such immediate success that within a few months the Luftwaffe was forced, in May, 1941, to discontinue the London blitz.

Before the Battle of Britain, the English Army and Navy, as well as the R.A.F., saw the importance of radar and set up research to find how it could be adapted to their particular needs. The Royal Navy began by using radar as an air-warning device but quickly found that as a method of range finding and gunlaying it was without a rival. Compact radar sets for gunfire control have been in British naval ships since 1940, and contributed greatly to their successes.

Robot bombs from the mainland coast directed on London were conquered largely by radar. "One of radar's most uncanny developments," the report declares, "a gun which aims itself and follows a moving target automatically and unerringly, was the climax, in 1944, of the British Army's research into radar applications.

"This British invention was incorporated into United States equipment, and quantities were manufactured and shipped to Britain, just in time to shoot down 80% of the flying bombs which were destroyed by anti-aircraft batteries."

A radar set called A.S.V. (air-to-surface vessel), which showed the presence of shipping, was installed in aircraft in 1939. Early in 1942 a version of A.S.V. was introduced which was capable of detecting surfaced submarines. This eventually robbed the commanders of these vessels of immunity from aerial attack at night when they were accustomed to surface. This equipment helped win the Battle of the Atlantic.

While the report claims for England the first operational system of radar to be installed in the world, that is, the detection towers installed along the coast, it gives credit to America for her independent development of radar, and particularly for her mass production of American, British, or cooperatively designed equipment.

In August, 1940, at the very moment when radar was proving its supreme value in the Battle of Britain, a small group of British scientists arrived secretly in Washington with complete plans of existing equipment and proposed equipment not yet fully developed. From that time on there has been a full interchange of information and research and the closest collaboration in development.

Science News Letter, August 25, 1945

RADAR MANUFACTURE—This is the way those super-secret radar factories looked. Here the equipment is being assembled in a General Electric plant for use in the U. S. Navy. Notice that the large tube which acts as electronic eye for the set is visible in side view in the set being handled by the worker at the left. The face of the tube shows in the set in the left foreground.

PUBLIC HEALTH

Mortality in Childbirth Cut by One-Third

➤ THE CHANCE that a mother will live to enjoy the child she brought into the world is continually improving. The