Office of Scientific Research and Development Encyclopedia Article

Office of Scientific Research and Development

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When World War II began in 1939, the United States was years behind Germany in technical military research. Foreign weaponry was clearly superior. The United States had to catch up and catch up fast. On June 12, 1940, Dr. Vannevar Bush (1890–1974), an electrical engineer and president of the Carnegie Institution, a prestigious research center, met with President Franklin Roosevelt. Bush, a brilliant, innovative scientist, urged Roosevelt to establish a group of American scientific, military, and business leaders who could coordinate technological research that would lead to the production of advanced military equipment. Roosevelt agreed and authorized formation of the National Defense Research Committee (NDRC); he put Bush in charge. Operating with presidential emergency funds alone, NDRC soon ran short of money. However, in mid-1941 the Office of Scientific Research and Development (OSRD) was established and funded by Congress. Bush became the OSRD director, and NDRC became the chief operating unit under OSRD. The visionary Dr. Bush brought together scientists from research universities such as Massachusetts Institute of Technology (MIT), California Institute of Technology, Harvard, and Columbia; he also brought in scientists from technological and industrial businesses such as Bell Laboratories, General Motors, Westinghouse, Philco, Sylvania, Standard Oil, and Dupont Chemical. These businesses sent their engineers to the university research labs to move new scientific breakthroughs into production.

Working with army and navy researchers and more than a billion dollars of government money, the cooperating scientists quickly created many technologically advanced innovations for the war effort. OSRD's many accomplishments included improved radar equipment; development of sonar (using sound waves to find objects underwater) by the Harvard Underwater Sound Lab for use on submarines; amphibious landing vehicles known as DUKWs, designed by General Motors; land warfare devices such as mine detectors, flamethrowers (a weapon that spews out fiery liquid), and bazookas (a hand-held rocket launcher); various rocket designs; medical advances such as the use of plasma in transfusions, and large-scale production and use of penicillin; invention of the pressurized cabin for aircraft and antigravity suits that kept pilots from blacking out in steep dives; and the tiny proximity fuse vacuum tubes. Made by Sylvania, the proximity fuse could be inserted in various projectile weapons; it used radar to detect a target. It was called the most significant scientific wartime achievement, next to the atomic bomb. Bush and OSRD were also involved in developing the atomic bomb.