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THE RADIO CORPORATION OF AMERICA

THE DEDICATION OF THE LABORATORIES AT PRINCETON, N. J.

THE new RCA Laboratories built by the Radio Corporation of America at Princeton, New Jersey, a modern center of radio and electronic research, were dedicated on September 27.

Lieutenant General James G. Harbord, chairman of the board of Radio Corporation of America, presided and introduced the speakers: Major General Dawson Olmstead, chief signal officer of the Army; Colonel David Sarnoff, U. S. Army Signal Corps, and Otto S. Schairer, vice-president in charge of RCA Laboratories.

General Harbord pointed out that the RCA Laboratories assemble under one roof kindred activities which have hitherto been performed by individuals widely separated by time and space. "The Laboratories give our future scientific work the advantage of collective effort—the advantage in our attack on our problems of delivering a blow with a clenched fist instead of with open fingers. They promise much for the future of the radio industry, now so closely tied in with our war effort. And when the lights are once more turned on in this darkened world, we shall take off from here for a brilliant future of which we can now dream but can not measure."

Ground was broken for the laboratories on August 8, 1941. On November 15 of that year the cornerstone was laid, dedicating the project to increase in the usefulness of radio and electronics to the nation.

A tour of the laboratories reveals their size, magnificence, efficiency and promise. It is not only a radio laboratory, but many laboratories which reveal that modern radio is a science spreading into many fields—electronics, sound-acoustics, chemistry, physics,

mechanics and optics, from which grow many by-products and branches—cathode ray tubes, fluorescent materials, lenses and photography.

The laboratories building is a three-story structure with long corridors into which open 150 laboratory bays. To understand what is behind them, the inspection must begin in the basement. It is the nerve center. Into it, through underground arteries of conduits and pipes, are fed the electric power, gas and water supply. Alongside huge water tanks and air-conditioning apparatus are transformers and vault-enclosed power regulators, while the compressed air and steam are supplied from the heating plant. From two 300-foot wells, 600 gallons of water are pumped in a minute.

All the services of electricity, water and gas flow in conduits on the basement ceiling under the main corridor. There are 104 vertical shafts, which rise from basement to penthouse, with outlets on each floor. From these, wires and pipes carry the vital services to 420 work-benches, each 6 feet long. These unique service shafts are described as a most important feature and development—an original contribution to laboratory construction.

Standing at the point where the "T" of the laboratories structure is crossed, on each of the three floors one looks to the right and left down the 244-foot corridors or wings. The total length of a corridor from end to end is 488 feet. That is the span across the top of the "T." The doors on both sides of these spacious hallways on all three decks open to the many laboratory bays, and to nine administrative research offices and workshops. On the main floor, the general office section is near the entrance. Executive offices are in a section on the third floor.

Entering one of the laboratory bays, visitors are impressed with the spaciousness and broad daylight exposure, supplemented by modern indirect lighting, which casts no shadows. The work-benches are so designed and arranged as to be a joy to any worker. A wiring trough extends along the top of each bench, and the markings on the panel outlets indicate that almost any phase of electric current—AC or DC, and at various voltages, is at the finger-tips of the experimenter. In addition, there are taps on the bench for air, gas and water, as well as hydrogen and oxygen in the bays where they are used. And, of course, there are convenient electric plugs for soldering irons and other electrically operated tools. Flexibility in construction is the keynote.

The many laboratory bays indicate a great variety of activity within the laboratories. The Television Laboratory is described as "the last word in facilities for television research." Other laboratory bays are devoted to research in chemistry, especially fluorescent materials; acoustics, radio facsimile, centimeter-wave transmission and reception, receiving tubes, cathode ray tubes, transmitter tubes, under-water sound and various activities associated with the future of radio and electronics.

The model shop is considered to be the most modern of its kind and the best equipped in the world. For example, the meter room has complete calibrating equipment and 3,000 different meters available for covering voltage, current, temperature and speed. The Technical Library of the laboratories is catalogued as "complete in the communication field." There is an ultra-modern kitchen which adjoins a cafeteria with a capacity to serve from 180 to 200 persons at a time.

SCIENTIFIC RESEARCH IN WAR AND PEACE

THANK you, General Harbord and Mr. Schairer, for inviting me to attend the dedication of the RCA Laboratories. It's comforting to know that one is not forgotten by his own family, even when he is as far away from home as Washington. It is a real privilege to be here to-day and see in being the dreams of years.

When the cornerstone of this building was laid in November of last year, I attended the ceremonies by radio on board a ship on the Pacific Ocean somewhere between Honolulu and San Francisco. At that time we were blissfully unaware of what was immediately ahead of us. At the very hour the cornerstone was put in place, the plans of the Japanese war staff to attack Pearl Harbor must have been completed. The enemy ships and planes, which three weeks later were to plunge this nation into war, were in readiness to set forth on their treacherous mission. Our days of peace were numbered, and their number was very few.

It is significant that the foundations of this building were laid in time of peace, and its superstructure has been raised in time of war. Similarly, the modern sciences of radio and electronics have their roots in peaceful soil—in the search by men of good will for ways and means to make the world a better place to live in. Yet these sciences, and all science, are now enlisted in total war.

Total war as it is fought to-day is more than a war of populations or mere quantity of weapons or alone the human qualities of courage and endurance. More than ever before in history, this war is a contest between the brains and imagination and teamwork of the scientists, engineers and production workers of one group of nations, pitted against those of another group. While it is true that the decision ultimately will be made on the battlefield, the high seas and in the air, the fighting men who have the greatest resources of science, engineering and production back of them will be the victors.

Most people are aware that science is making a tremendous contribution to modern war in terms of guns, high explosives, airplanes, radio and synthetic rubber. By developing and improving these vitally important