



Wilfrid E. Johnson

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1905-1985

By Roy H. Beaton

Wilfrid E. Johnson, an early pioneer in the nation's jet engine program and a key figure in the success of national nuclear programs (both weapons and electric power), died on February 10, 1985, at age seventy-nine. At the time of his death, he had been retired for over ten years while residing in Richland, Washington, with his wife of over fifty-four years, Esther Taylor Johnson. Although originally a skilled machinist-mechanic, he rose to become an "engineer's engineer," a highly effective industrial manager, and a top federal administrator in a "series" of careers.

Wilfrid Johnson was born in a small coastal town, Whitley Bay, England, on May 24, 1905. As was the custom in that part of the world at that time, he left school to go to work after completing the first eight grades at the age of twelve. With his mother and step-father, he emigrated to the United States when he was fifteen years old, arriving in Astoria, Oregon, in September 1920.

Wilfrid served as a machinist's apprentice at Pacific Machine & Blacksmith Shop in Astoria on the Columbia River for six years. Enroute to receiving his Journeyman's certificate at age twenty-one, he became recognized as a most capable and dedicated mechanic in the repair and maintenance of all types of marine engines in the hundreds of small and large fishing boats making Astoria their home port.

In 1926 when he was twenty-one, he became a naturalized citizen of the United States. Simultaneously, he learned that under federal law "Land Grant" colleges like Oregon State College were required to admit student applicants over twenty-one without high school diplomas, providing they continued work on obtaining a diploma. Accordingly, Wilfrid enrolled in mechanical engineering at Oregon State College at Corvallis in 1926 while studying high school courses on his own. By "burning the candle at both ends," Wilfrid received his diploma in 1928 and in 1930 his B.S. in mechanical engineering from Oregon State College. At his graduation he received the Joseph H. Albert Award as the "Outstanding Senior in Engineering School."

Prior to graduation Wilfrid had been signed up by General Electric Company (GE) recruiters at the Corvallis campus. He then journeyed to Schenectady, New York, to report for work, where he was assigned as a design and development engineer in refrigeration engineering, a position he was to fill with steadily increasing responsibility for the next ten years. Meanwhile, Wilfrid continued to press his suit with his college sweetheart, Esther Taylor, back at Oregon State College. They were married in 1930.

In GE refrigeration engineering, Wilfrid became both a prolific inventor and technical paper writer during the 1930s, turning out papers on everything mechanical from diesel engine crankshafts to cone pulleys, flexural springs, and compressors, and obtaining and assigning to GE about a dozen patents on refrigeration devices. During this period, among other achievements, he successfully designed and developed the first hermetically sealed compressors for use in household refrigerators. Later, he also designed and developed the first "service-sealed" compressor for use in commercial water coolers. In 1939 Wilfrid was granted an M.S. in mechanical engineering by Oregon State College, based almost entirely on the number and quality of his technical papers published after he had received his B.S. degree.

Early in World War II, Wilfrid was transferred into classified aircraft engine turbo-supercharger development and production operations of GE at Lynn, Massachusetts, and Syracuse, New York. He successfully brought previously developed superchargers into high-volume production by applying ingenious manufacturing engineering techniques. He coordinated the design work at five different plants and closely supervised the design development of the CH-5 supercharger. This new supercharger, when combined with an improved version of a Pratt & Whitney engine, rejuvenated production of the P-57 (Thunderbolt) aircraft, ultimately one of the most successful planes in the Allied arsenal.

Still later in World War II (1944-45), while serving as division engineer in GE's Aircraft Gas Turbine Engineering Division, Syracuse, New York, Wilfrid recruited, organized, and trained an engineering force to carry out the development and production testing of early jet engines for aircraft. This organization accepted an incompletely developed jet engine design from Frank Whipple of British Rolls Royce, completed its development, and successfully placed it in production. Wilfrid subsequently became general manager of this first U.S. jet engine production plant. No engine produced by this GE Syracuse plant ever failed in flight.

During the period 1945-48, Wilfrid served as manager of GE's Engineering, Air Conditioning Department. In this position he rebuilt the entire postwar organization and successfully converted the department back to peacetime production. In 1948 because of his effectiveness in these activities, he was transferred to the Hanford Atomic Products Operation at Richland, Washington, owned by the U.S. Atomic Energy Commission (AEC) and operated under contract by GE. For several years he served as manager of design and construction. In 1951 he was made assistant general manager, and in 1952 he became general manager, where he served until 1966.

During this period, Wilfrid was responsible for carrying out a massive postwar program of design, construction, startup,

and subsequent successful operation of many new plutonium production and product separation facilities at Hanford. These included at least five new production reactors (two of them twice as large as any built before), a new Redox and later a Purex solvent extraction separations plant, a Remotely-Operated Final Metal-Purification Plant (234-5), and eventually the AEC's first dual-purpose (plutonium and power production) New Production Reactor (NPR). This reactor was shut down for updating and modernization after more than twenty-three years of successfully producing weapons-grade plutonium and waste heat steam for the generation of eight hundred megawatts of electric power. For his successful direction of all these activities, the AEC awarded Wilfrid in 1966 its Special Citation for Leadership.

On May 1, 1966, Wilfrid elected to take an optional early retirement from GE, but continued to serve as a consultant to the company's new Nuclear Power Operations headquartered at San Jose, California. Shortly thereafter President Johnson appointed him a commissioner of the AEC. Approved by the U.S. Senate, Wilfrid took office on August 1, 1966, filling the unexpired term of Commissioner John G. Palfrey. On June 8, 1967, President Johnson reappointed him for a new five-year term of his own, extending through June 30, 1972. During this period, Wilfrid participated actively in the AEC's extensive expansion of its licensing of commercial nuclear power plants.

Wilfrid Johnson was professionally active throughout his long career. In 1938 he received the "Outstanding Young Engineer Within Ten Years" award from Pi Tau Sigma. In 1959 he was granted an honorary D. Eng. degree from Oregon State College and also elected to Sigma Xi. In 1968 he was elected to the National Academy of Engineering for his "contributions to jet engine manufacturing engineering and nuclear materials production." He was a fellow of both the American Society of Mechanical Engineers and the American Nuclear Society, as well as a member of the

honorary societies of Tau Beta Pi, Phi Kappa Phi, Sigma Tau, and Pi Tau Sigma.

Wilfrid and Esther Johnson raised three children: Louise McKee of Bellevue, Washington, and Robert and Richard, both of New York City. Wilfrid had a lifelong love affair with horses as an avocation, beginning as a young boy. He learned to ride with professional skill while a member of the R.O.T.C. at Oregon State College, where he became a member of Scabbard & Blade before receiving his commission as 2nd Lieutenant in Field Artillery. He did not get his own horse until he had been married for ten years, but was rarely without horses from that time on.

Wilfrid remained personally grateful to this country throughout his lifetime for what he perceived it had offered to him in opportunities and rewards for a young immigrant boy with little initial formal schooling. On the other hand, he more than paid for his advancement and rewards by dedicated hard work and striving for perfection on everything he touched or worked on. Those who worked around him, either above or below, were compelled to perform similarly!

Overall, Wilfrid Johnson was most impressive as an associate, awesome as a boss, and miles ahead of his time in the application of the principles of professional business management. He was the kind of man who will always be missed very much!