

him. His skill, technical knowledge and initiative were in a large measure responsible for the development of new weapons being tested at this station * * *."

Chronological transcript of service:

August 1930 to September 1931: U.S.S. *Richmond*.

October 1931 to October 1932: Naval Air Station, Pensacola, Fla. (instruction).

November 1932 to April 1935: Scouting Squadron One-B (U.S.S. *Langley*).

April 1935 to June 1935: Scouting Squadron One-B (U.S.S. *Ranger*).

July 1935 to May 1937: Patrol Squadron Two-F, Aircraft Squadrons.

June 1937 to July 1938: U.S.S. *Philadelphia* (Aviation unit).

August 1938 to May 1940: U.S.S. *Phoenix* (Senior Aviator).

June 1940 to September 1942: Naval Aircraft Factory, Navy Yard, Philadelphia, Pa., (Assistant Chief).

October 1942 to April 1943: Headquarters Squadron, Fleet Air Wing two (Commanding Officer).

May 1943 to June 1944: Bombing Squadron 106 (Commanding Officer).

July 1944 to July 1947: Naval Ordnance Test Station, Inyokern, Calif. (Experimental Officer) (Fleet Air West Coast, 1 month).

August 1947 to December 1948: Sandia Base, Albuquerque, N. Mex. (Director, Plans and Operations for Armed Forces).

December 1948 to June 1951: Composite Squadron Five (Commanding Officer).

June 1951 to May 1953: U.S. Atomic Energy Commission, Washington, D.C. (Military Application Division).

May 1953 to May 1954: U.S.S. *Point Cruz* (CO).

June 1954 to January 1956: U.S. Naval Ordnance Laboratory, White Oak, Md. (CO).

February 1956 to December 1956: U.S.S. *Franklin D. Roosevelt* (PCO and CO).

January 1957: Office of Chief of Naval Operations, Naval Department (Director, Strategic Plans Division).

October 1957 to April 1959: Assistant Chief of Naval Operations (Research and Development), Navy Department.

April 1959: Deputy Chief of Naval Operations (Development), Navy Department.

Navy—Office of Information (Biographies branch) 25 May 1959.

Graduate work and technical background Vice Adm. John T. Hayward, U.S. Navy: Years 1937, 1938, 1939, 1940 University of Pennsylvania, Moore School and Temple University.

(a) Theoretical physics.

(b) Electronics.

(c) VHF frequency currents.

(d) Mathematical analysis.

(e) Elementary foundry work.

(f) Experimental atomic physics.

(g) Applied gyro dynamics.

(h) Procedures in experimental physics.

(i) Magnetism.

Years 1944-46 California Institute of Technology OSRD ran NOTS Inyokern technical work at this time.

(a) Exterior ballistics of rockets.

(b) Chemistry of explosives.

(c) Chemistry of propellants (solid).

(d) Aerodynamics.

(e) Optics.

(f) Microtime physics.

(g) Interior ballistics of rockets.

(h) Strength of materials.

(i) Explosive casting techniques.

Years 1947-48 University of New Mexico and Los Alamos.

(a) Contemporary physics.

(b) Physics of the atmosphere.

(c) Wave mechanics.

(d) Critical assemblies.

(e) Uranium processes.

(f) Plutonium processes.

(g) Nuclear processes.