

LTJG Philip Dalton

1903 - 1941

Philip Dalton LTJG USNR
Inventor: E-6B D.D.R.C.



Philip Dalton will long be remembered by pilots, navigators, and bombardiers as the inventor of the E-6B Dalton Dead Reckoning Computer on which he held the original patent. Born April 1, 1903, he was the fourth son of William and Ida Dalton of Scotia, NY.

In June 1924, Phil received his Bachelor of Arts Degree in Physics from Cornell University and just eight months later in February 1925, earned his Master's Degree in Physics from Princeton University Graduate College. While at Cornell, he was in the ROTC, receiving his commission as a Second Lieutenant in the Army Field Artillery. In 1930, after doing his PHD thesis in Artillery Fire Control at Harvard University, he resigned the Army commission and enlisted in the Navy as a Seaman Second Class, attended flight school in Pensacola, FL, and received his wings on June 24, 1931. His enlistment was terminated with an Honorable Discharge in July 1931 to accept an appointment as an Ensign, US Naval Reserve. In accordance with the custom of ordering Reserve Officers to one-year training with the Fleet, he was ordered to report to Aircraft Squadrons Scouting Force on August 1, 1931 and served aboard the USS Northampton. Each year thereafter, he participated in various periods of training duty and was promoted to Lt. Jr. Grade in March of 1937.

Phil had an unusual capability for inventing mechanical devices. Before joining the Navy, he was active in developing a device for pilots to use to determine where they were and where they were going ("dead reckoning"). For years, he continued his development and improvement of these devices and was awarded numerous patents for them. In 1933, he originally designed a compact pocket-sized aircraft time-speed-distance computer. Later that year he improved it and called it the "Dalton Aerial Dead Reckoning Slide Rule Model B." In 1934, he invented the Aircraft Navigational Computer, Mark 7. This instrument used the Model B with other calculations for wind triangle toward a center point which represented an aircraft carrier. In 1935 he developed an Army E-1A which was based on the Mark 7, but since the Army flew over land not sea, he devised the use of curves for the wind triangle reversing the Navy procedure by plotting away from the center point. In 1937, at the request of the Army Air Corps, he improved this as his E-1B. He continued to improve this idea for the Army, the Navy, and the Royal Air Force (one of his inventions was used extensively in the Battle for Britain) until his E-6B Dalton Dead Reckoning Computer was designed in 1940. It subsequently became the standard for use by both the Army and Navy.

In November 1940, Phil was called to active duty and assigned as a flight instructor at Anacostia Naval Reserve Air Base. July 1941, while on a training flight, he and his student crashed to their deaths. Phil was survived by his wife, Margaret Clark Dalton. Just prior to his death, Phil had been studying dive bombing ballistics and sighting devices.