The Boeing B-17 Flying Fortress originated in response to Army Air Corps Circular Proposal 35-26 (1934) which called for a new multi-engine bomber to replace the Martin B-10. The proposal stipulated that the new bomber must be able to carry 2,000 pounds of bombs 1,020 miles at a top speed of 200 miles per hour. It did not specify the size of the bomber or the number of engines. The Boeing response was the revolutionary Model 299. The four-engined Model 299 was capable of carrying 4,800 pounds of bombs at 250 miles per hour and had a range of 3,000 miles. Its two competitors, the Douglas Aircraft Company's DB-1 and the Glenn L. Martin Company's Martin 146 both were vastly outclassed by the new Boeing aircraft. The DB-1 was selected after the Model 299 was destroyed in a crash on 30 October 1935. In order to further develop long-range strategic bombardment aircraft, the Army Air Corps ordered 13 of the new Boeing Aircraft, designated YB-17 and already popularly known as the "Flying Fortress," as service test models, serving at Langley Field, Virginia and later at March Field, California.

With the advent of war in Europe in September 1939, Congress increased funding to acquire large numbers of advanced aircraft like the B-17. However, the complicated process of creating the industrial base to produce the proposed air fleet took several years, and by the American entry into the war on 8 December 1941, only limited numbers of B-17s had been produced. The first American bombing raid conducted during World War II was by three B-17Ds which raided Japanese shipping on 10 December 1942. The first model produced in quantity, the B-17E, of which 512 examples were built, was the first to see action in Europe beginning with a raid on Rouen, France on 17 August 1942.

Begun in May 1942, a production pool between Boeing, Vega (later Lockheed-Vega), and Douglas produced a total of 3,400 B-17F aircraft. The definitive model was the B-17G; 8,680 were produced by Boeing, Vega, and Douglas. The B-17G saw almost exclusive service in the European Theater of Operations where strategic bombardment missions were aimed at destroying the war-making capability of Nazi Germany.