

FRIENDS JOURNAL



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A Tour of the Eighth Air Force Control Tower

AT THE NATIONAL MUSEUM OF THE U.S. AIR FORCE™

By JOHN KING

As you drive into the grounds of the National Museum of the U.S. Air Force, you will notice two buildings in the airpark area on your left. One of them is a replica of an Eighth Air Force (AF) control tower, the type of control tower that would have been at every major Eighth AF base in England during World War II. The other building is a Nissen hut, a type of temporary building also found at Eighth and Ninth AF bases, as well as British Royal Air Force (RAF) bases in the wartime United Kingdom. Our two Nissen huts came from the RAF base at Debden which was the home of the Eagle Squadrons (Americans flying with the RAF before the United States got into the war) which later became the 4th Fighter Group of the Eighth AF.

This article will focus on the control tower and how a real Eighth AF control tower functioned in World War II. The Museum's tower was built in 1995 by the Eighth

AF Memorial Museum Foundation, a part of the Eighth AF Historical Society. By all accounts, it is a faithful recreation of the standard control towers found at Eighth AF, Ninth AF, and RAF bases.

During World War II, on any given day the skies over Great Britain were filled with aircraft and obviously there was a need for a system to control this activity. The RAF introduced a flying control system in 1940. And when the United States joined the war, the U.S. Army Air Forces was smart enough to adopt the British system.

The standard complement of personnel at an Eighth AF control tower was three officers and about 50 enlisted personnel. The enlisted personnel were highly trained specialists and included air traffic controllers, radio operators, weathermen, rescue personnel, alert crews, and administrative staff.





► Thermodynamic diagrams

As you enter the control tower, you'll notice that the first floor is primarily dedicated to weather forecasting. Weather was an important factor in the United Kingdom. The weather could change quickly and it was important that aircrews were aware of what they might encounter. The weather recorder's room contains many of the recording instruments such as wind speed and direction gauges, a sensitive aneroid barometer, a 24-hour clock, and two Teletype machines — a Model 15 page printer and a Model 19 transmitter. The Model 15 received a daily weather report that gave forecasts for approximately 700 bases in the United Kingdom (the Eighth AF had about 100 of those bases, all in England) and the Model 19 sent up hourly reports of weather data for the local base.

The next room on the first floor is probably where transient pilots would have been briefed on the weather. A prominent feature of this room is the clipboards which would have contained the daily weather reports for all bases received via teletype. These reports would have been very helpful to pilots flying from one base to another in different parts of the United Kingdom. Pilots assigned to bomber and fighter bases would have received



their weather briefings en masse prior to a mission. This room also has two thermodynamic diagrams (weather charts), one of which is from August 5, 1944.

If you look through the window at the ground outside this room, you will see a large concrete slab. At a wartime base, this would be roughly 40 feet by 40 feet and would contain symbols of basic aerodrome information. The Museum's has two symbols indicating it is a military field and the landing direction. Temporary information such as "Standard Beam Approach," "Look at the Wind Tee," and "Parachutes dropping in the area" could have been posted on a cross-tee on a corner of the slab. This feature at air bases was meant to cut down radio traffic that might be intercepted by the enemy.

Another room on the first floor is configured as an office and is where the volunteer manning the tower is located. In this room is a key educational feature of the tower: an electronic map that shows all the Eighth AF bases in England as of June 6, 1944. All the Eighth AF bases are



◄ The weather recorder room.



◀ A caravan mobile control trailer stationed with the 381st Bomb Group at Ridgewell, Essex, England.

B-24 Liberators, and bases with Eighth AF photo reconnaissance Supermarine Spitfires. Another interesting feature of this room is that 63 bricks from 8th AF control towers are incorporated into one wall. They are all identified and are set in the wall to represent their geographical relationship to each other.

Your enjoyment of the tower will be enhanced by the many period posters and news articles on the walls and the 1940s-era music playing in the background. In one of the breakrooms you can even see some wall panels that were removed from Eighth AF control towers with World War II graffiti still on them.

On the second floor you'll learn more about the air traffic control aspect of the tower. The first room you'll come to highlights the Caravan, which was essentially a mobile control tower. It was a small, towable trailer filled with basic radio equipment and various visual communication aids such as an Aldis lamp for sending Morse code signals and assorted flares to help in emergency landings. It could be positioned at the end of a runway and could take over air traffic control duties if it was too foggy for personnel in the tower to see the end of the runway. The caravan was manned by two NCOs (non-commissioned officers; sergeants).

This room also has a scale-model Eighth AF base layout complete with B-17s, B-24s, P-51s and even a visiting RAF Avro Lancaster bomber. A novel feature is a B-24

formation aircraft returning to base. Formation aircraft were often war-weary bombers that were painted in highly visible schemes so other aircraft could form on them before a bombing mission. When the squadron or group commander took the lead of the formation, these aircraft would return to base.



▲ This electronic map shows all the Eighth AF bases in England as of June 6, 1944.

identified by name while Ninth AF bases and RAF bases are shown as dots, but not identified by name. There are buttons that can be pressed to light up bases according to the aircraft stationed there; Lockheed P-38 Lightnings, Republic P-47 Thunderbolts, North American P-51 Mustangs, Boeing B-17 Flying Fortresses, Consolidated



▲ Clipboards on this table contained daily weather reports for all the bases.



▲ Control tower officer's desk.

On this floor there is a more elaborate breakroom that has a dart board, checkerboard, a cot, and numerous posters from World War II. These breakrooms were necessary considering the long shifts during which tower personnel were involved in high stress operations.

The main control room is the heart of the air traffic control mission of the tower. We are fortunate to have so many pieces of equipment that would have been in a typical control tower. In this room the ground-to-air radios and dedicated telephone lines to crash crews, air-sea rescue units, British anti-aircraft and searchlight units, British Royal Observer Corps, and Fighter Command

Air Defense Headquarters are all in their proper places. Along the wall are an Aldis lamp and signal rockets that would have been used to visually signal aircrews. There is also an outline of the airfield lighting system as well as a map of the British Isles and western Europe.

All in all, the Eighth AF control tower at the National Museum of the U.S. Air Force is a wonderful tribute to the over 30,000 officers and enlisted personnel who manned these towers in England in World War II. 🌟



John B. King served 20 years in the Air Force as a supply officer, retiring as a major in 1988. He has had a life-long interest in aviation history and was the assistant editor of the Friends Journal from 2000 to 2010 and the editor from 2010 to 2012. Now retired, he volunteers at the Museum in the Fourth Building and the Early Years/World War II Galleries two days a week.

◀ A scale-model Eighth AF base layout.