

## Tube Of The Month

# Proximity Fuse Tubes

During WWII in the Battle of Britain, the British had big problems shooting down German planes with their anti-aircraft artillery (AAA). It was taking them 10,000 shots to take down a plane. They were forced to shoot them down plane to plane and they almost lost. Another side effect was the shower of fragments falling on their cities from the exploding shells. They were using mechanical timers in their projectiles so they were just guessing. Electronic proximity devices were tried but largely failed. Building tubes that could take a shock of 20,000 gs was difficult.

When the United States entered the War, they had the same problem. It was taking the Navy about 6000 rounds to hit a Japanese plane. Top-secret development projects for tubes and circuits were a high priority. The best working circuit used a UHF oscillator that would change frequency when in the proximity of an object. The circuit would use a thyratron switch tube to detonate the charge. The tubes had to be very small and rugged.

The proximity fuses were considered too secret for use in Europe, so were given to the Navy in the Pacific. Any dud rounds would be lost in the sea. During the island invasions where large formations of Kamikazes were sent against the Fleet, over 90% of the planes were hit. Without the fuses, the outcome may have been different. The fuses were deployed to Europe late in the War and during the Battle of the Bulge, ground artillery rounds that would all explode just above the target was credited with stopping many of the Germans. No place to hide.

The tubes were required to last 1 hour and no spares were required. Not much was left if you hit or missed. Very little information has been found on which tubes were used. Some tubes of the general type and age are shown. They had long wire leads and were hard wired into their circuits.

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