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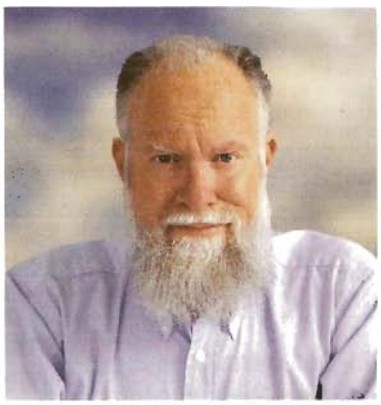
What's All This Carrot Juice Stuff, Anyhow?



RADAR WAS ONE of the significant advantages the Allies had in World War II. The British and the Yanks made the best developed equipment and made the best use of it. So when the Luftwaffe sent in hundreds of bombers and fighters over England in 1940, they were surprised to find Spitfires and Hurricanes waiting for them. How could the Allies be so clairvoyant as to know where and when the bombers would be coming?

The Germans were often quite reasonable in guessing how the Allies would block them, but they sometimes refused to comprehend that the Allies had their plans largely figured out. Still, the Germans got suspicious that the oddly built structures of the radar sites were a major part of their problem.

THE RADAR PROBLEM

The Germans decided to smash one of these "Chain Home" radar sites, at Ventnor, on the Isle of Wight, just off the south coast of England. The Germans attacked with many bombers and a heavy fighter escort. The RAF could not defend Ventnor, and at the end of the day, it was wrecked.

After the last Germans had fled, the British "boffins" (radio experts) realized they couldn't get the Ventnor radar up and working for the next day. This was a painful loss as the Ventnor radar was one of the farthest south, with long range, and best able to provide early warnings. The workers started doggedly to repair the wrecked wires and mechanical damage.

A few of the boffins decided to play a desperate joke. They set up one of the radio frequency tubes that had not been busted and set it to oscillating at about the right frequency. Even though it was not working as radar, it was making noise at about the right frequency. They fed it to a piece of antenna.

When the first German reconnaissance planes came over early the next morning, they detected this noise and thought the dratted Brits had gotten the radar back on the air. Nobody could figure out how they did it, but it seemed to be running.

Air Reichsmarshall Goering decided that the huge loss of men and equipment was not justifiable, since they couldn't knock out the radar. The Germans then began to attack other targets and goals. Eventually this turned into the bombing of the London Docks, which gradually went downhill.

So when the Germans tried to knock out the radar, they really did knock it out. But a small group of British RF engineers got a noise-maker working, and the Germans couldn't tell they were being spoofed. This may have been a significant turning point in the whole war, when the Germans were fooled by a cheap trick. And they backed away from a strategy that really was working, but those British tricksters wouldn't admit it.

MORE SPOOFING

Near the end of 1940, when the weather was getting rotten and there were very few hours of daylight, the Luftwaffe had to concede that it could no longer run daylight raids, as it was losing too many bombers. So, the night bombing began. The Luftwaffe figured out several ways to guide its bombers to drop their bombs in about the right place with radio beams and such.

The Brits worked on several ways to fool the German bombers and force them to drop their bombs in a spoofed location. It must have scared the hell out of the cows in the fields. But the night bombers kept on coming.

Radar technology kept improving. The Allies made several advances in miniaturization to get a simplified (yet improved) radar set small enough to work in a twin-engine "night fighter." It was not easy, but they got them working.

The ground-based radar would guide the night fighters to within a mile behind a bomber. With a little luck, the on-board radar would then acquire the image and get them close enough to the bomber to see the red-hot exhausts, and then they could shoot the bomber down—even at night, even in clouds.

The Luftwaffe eventually figured out something was going on to cause heavier losses than expected. The Brits decided to play it very cagey. They studied the effects of carotene and carrot juice on night vision. It turned out, a little carotene was good for your night vision, but a lot was bad for night vision.

The RAF sent out some "pilots" in uniform on various wandering trips on the London subways. These guys were not qualified for flying, for various reasons, but they could play the role of fighter pilots. The Brits loaded them up on carrot juice until their skin ran YELLOW and ORANGE. Then these "pilots" would talk furtively with their friends about their new schemes for attacking night bombers. (Of course, radar was never mentioned.) They did this where Nazi spies or sympathizers on the Underground would likely notice something.

By snooping, the spies thought that the British were able to use carrot juice to see the bombers at night. Shortly, the Germans were out in the markets, buying up all the carrots in France and Germany! Eventually, the Germans did figure out about radar-equipped night fighters, but the carrot-juice ploy made sure they were fooled as long as possible. ed

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