



## Operation Diver: Guns, V1 Flying Bombs and Landscapes of Defence, 1944–45 by Colin Dobinson.

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Anti-aircraft defenses are not the most glamorous part of the history of World War II. Compared to tank battles on the Eastern Front, the feats of US Marines in the Pacific, or U-boats in the Battle of the Atlantic, they have scarcely been studied. Yet prolific freelance historian Colin Dobinson's<sup>1</sup> exhaustive chronicle of how Britain's Anti-Aircraft (AA) Command helped defeat the German V-1 flying bomb is a great success story: thousands of British civilians were saved by the new technologies, smart leaders, and hard-working soldiers who destroyed so many V-1 missiles before they ever reached London. This was all the more remarkable because British anti-aircraft defenses had largely failed earlier in the war.

Anti-aircraft fire was seldom more than a nuisance to the Germans during the Battle of Britain, the nighttime Blitz on London, and the Luftwaffe's later raids on historic cities and seaports. But AA Command eventually triumphed over a daunting new challenge—the V-1, the world's first cruise missile, a small flying bomb zooming along at 330 mph, 1800 feet off the ground. By November 1943, secret agent reports, Enigma decrypts, and photo-reconnaissance images had identified the V-1 at its secret research facility at Peenemünde, Germany, and detected the construction of dozens of its launch sites in the Pas de Calais region of France. Hundreds of bombing raids on production, storage, and launch sites delayed the onset of V-1 attacks until after the Normandy invasion. But on the night of 12 June 1944 Oberst Max Wachtel, the commander of Flak Regiment 155, launched the first four "buzzbombs" that crossed the English coast; one of them reached London and killed six people.

The RAF's Fighter Command, knowing the V-1's range and the location of its launch sites, had prepared its defenses, and, besides the guns in London's inner defense zone, AA Command created a "Kentish belt" of heavy and light AA weapons along the route the buzzbombs would have to fly to reach the capital. Fighter aircraft were prepared to knock them out of the sky over the Channel or chase them across England. A network of barrage balloons was erected to catch missiles that eluded the guns and planes. The V-1s came in much lower than anticipated and the light anti-aircraft weapons—machine guns and 20 mm cannon—could not destroy them. In addition, British radar sets and associated predictors often failed to identify and target the missiles, which zipped past them in seconds. Moreover, the guns were in constant conflict with the fighter planes, which, though prohibited from chasing V-1s into AA gun zones, frequently did so.

In the last 10 days of June the rate of incoming targets making landfall varied widely. On Wachtel's strongest day some 116 flying bombs crossed the coast; on his weakest the figure reached 41. The daily average for the second half of June stood at 86, and fell to 76 in the first half of July. More

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1. His three previous books are *AA Command: Britain's Anti-aircraft Defences of the Second World War* (London: Methuen 2001), *Fields Of Deception* (id., 2003), and *Building Radar: Forging Britain's Early-Warning Chain, 1939–1945* (id., 2010).

than this were launched, of course, and over the same two periods the daily averages worked out at 117 and 104 respectively. But the gunners found it useful to measure progress against available targets—those crossing the coast and coming within range of the guns—and of those, on most days, they would be lucky to stop one in ten. (146)

This dismal performance led to many meetings and a rapid reorganization of the Kentish belt. The commanders realized that only one model of the 3.7-inch anti-aircraft gun was accurate enough to be effective. Since mobile versions were comparatively ineffectual, AA Command had to quickly find ways to emplace fixed models in open fields. But even against the better guns arranged in a broad arc across southern England, too many V-1s were getting through. The ultimate success of the guns in destroying most of the missiles would come only with technological advances: in July, the British got their first shipments of VT-98 proximity fuse ammunition, more of the new SCR-584 radar sets, and (Bell Telephone Laboratories) fire-control computers. Not coincidentally, all of these innovations were American.

But the crucial change was geographical. In the space of a few days in mid-July, the Kentish belt was dismantled and its guns moved to the Channel coast. Hundreds of them now pointed out to sea, from Eastbourne in the west to Dover in the east. This solved many critical problems in one fell swoop. Now “Category B” hits—where missiles shot out of the sky fell to the ground and exploded—no longer mattered. No more damaged buzzbombs would land on towns in Kent. The conflict between guns and fighters was fixed as well, since fighters could stay ten miles away from the coast and the new radars, once suitably positioned, no longer had to deal with local topography.

In the 24-hour period covering 28/29 August the gunners were credited with 52½ kills, bringing their two-day total to 123½. The fighters had got 43, and what remained of the balloons stopped 5½. In those two days the number of “incidents” in Greater London fell to just 12. (283)

But the Germans threw one more curveball. On the night of 9–10 July, a V-1 approached England from a launch point in (AA Command calculated) *Holland*, which meant that the coastal guns would have to be shifted north and east. But the missile had, in fact, been launched from a Heinkel He-111 bomber flying over the North Sea. As Canadian troops overran the V-1 launch sites in France, only such air-launched missiles could reach England. AA Command once again moved its guns to the East Coast, where they henceforth shot down most of the missiles.

Dobinson skillfully tells the story of British AA Command vs. V-1 from the bottom to the top.<sup>2</sup> At ground level, soldiers, including thousands of women, lived in tents, braved muddy fields and long drives at night in the rain, and faced an enemy weapon unlike anything seen before. At the top, British leaders, from Winston Churchill on down, made tough decisions on short notice as civilian deaths mounted. Using meeting records, postwar interviews, and the memoirs of participants, Colin Dobinson astutely reconstructs the crucial decision to move to the coast. Like all his books, *Operation Diver* is lavishly equipped with excellent photos and maps, notes, an index and bibliography, and a welcome Gazetteer of Sites for readers wishing to visit the places where the guns once fired at the buzzbombs.

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2. For a history of both Allied and German experiences with V-1 and V-2 missiles, see Benjamin King and Timothy Kutta, *Impact: The History of Germany's V-Weapons in World War II* (Cambridge, MA: Da Capo, 2003).