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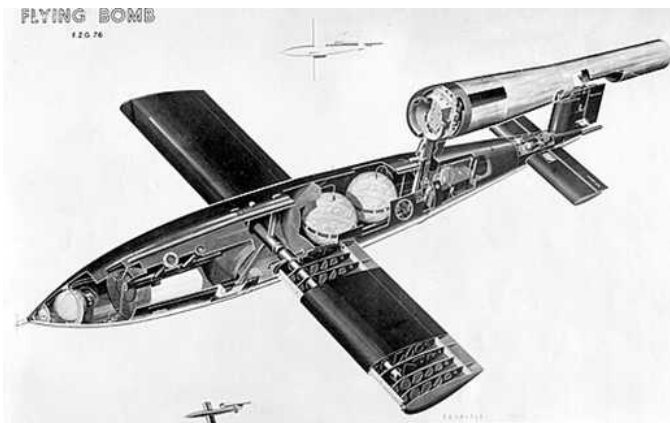
March 2026

Newsletter of the International Research Group Orford Ness

This issue of our newsletter concentrates on the part played by anti-aircraft batteries on Orford Ness in confronting the menace of V1 flying bombs in 1944 and 1945. The destruction wrought by drones like the Shahed are much in the news these days, so it is sobering to remember just how terrifying the V1 was, with a warhead 17 times as powerful! The pieces of this account came from different sources, but more remains untold. So - if you have information about this story that adds to or disagrees with our account - please let us know!

Olaf Kirchner, Chairman

Operation DIVER comes to Orford Ness Oct. 44 – Mar. 45



Hidden from view by the passage of time and the rewilding of the Ness are two sites in the south-west corner of the airfield which, during the unusually cold winter of 1944-45, played a key role in Britain's defence against the German V1 flying bomb threat, otherwise known as Operation Diver. On each site were emplaced a group of four quick-firing 3.7 inch anti-aircraft guns with their associated ammunition, proximity fuzing mechanisms, centimetric gun-layer radar, and predictor fire control systems. Their role was to

shoot down these unmanned weapons, which were air-launched by bombers over the North Sea, as they flew in over the coastline at low level. They were part of a massive deployment of such guns along the East Coast from September/October 1944 until the end of March 1945, when the last V1 was shot down near the Ness on 29 March. But how did this situation come about, how was it managed, and how was it finally brought to a successful conclusion?

The Germans, unknown to the Allies until some months later, started development and testing of the V1 flying bomb and V2 rocket in late 1942 at Peenemunde on the Baltic coast; a site not unlike the Ness in many ways, given its research function, isolation, and proximity to the sea. By late 1943, launch sites for the V1 started to be identified along the northern coast of France, and a week after D Day in June 1944, the first V1s, also known as Doodle Bugs, were launched against London. They were met by a variety of defensive measures which included an array of anti-aircraft guns sites on the North Downs, known as the Kentish Gun Belt, barrage balloons closer to and around London, and fighter aircraft interdiction zones to both the south and the north of the Belt. As the Allies broke out of Normandy in August 1944 and started a rapid advance into the Low Countries, the V1 launch sites were progressively overrun, forcing the Germans to change the source and direction of their continuing V1 assault. As a result, many of the guns were redeployed into a Coastal Belt in Sussex and Kent, as well as the Diver Box covering the

*Operation DIVER comes to Orford Ness Oct. 44 –
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Thames estuary approaches. When the Germans were forced, by further allied advances into Holland, to start launching V1s from bombers based in North-West Germany, two further



3.7 inch HAA gun at Chantry Farm, Orford

redeployments were ordered: the first to the Diver Strip covering the coast of East Anglia up as far as Great Yarmouth and a little later the Diver Fringe covering the coast of Lincolnshire and Yorkshire.

By all accounts, not least those of General Pile, who commanded the Anti Aircraft Artillery, the redeployment to the Diver Strip starting in late September 1944 was pretty chaotic, and not helped by the scale of equipment being moved on East Anglia's narrow and twisting roads, but by mid October some 300 guns had been repositioned in over 70 sites.

These included over 20 in the hinterland immediately behind the Ness and were predominantly composed of four HAA 3.7inch guns laid out 30 yards apart in either a shallow curve or a straight line oblique to the direction of threat. Often the sites would be in pairs, and they were supplemented in some places with LAA gun sites. All the HAA guns were mounted on temporary Pile platforms constructed out of old railway lines and sleepers connected to a central holdfast frame, and were slaved to a radar and supported by a fuzing mechanism and predictor fire control system. The guns were served by their Royal Artillery gun crews and significant quantities of

ammunition to cope their high rate of fire. Due to the unusually severe conditions of that particular winter, Nissen huts were also constructed at a number of sites to provide shelter for the troops. At some stage slightly later in the Diver Strip deployment, two additional HAA sites were



V1 mounted under wing of Heinkel 111

located on the Ness airfield, assisted by the construction of a pontoon bridge over the river from Orford Quay. This was as much to do with ammunition resupply as it was to facilitating the deployment, but its existence was short-lived as attempts to remove a build up of ice floes from upriver, allegedly including the use of dynamite by an over enthusiastic Royal Engineer officer, resulted in irreparable damage to the bridge.

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Dates for your calendar



- Thursday 21st May 2026:
Cold War day on Orford Ness.
IRGON will be present, lectures and tours are planned.
<https://www.coldwarnetwork.co.uk/ncwhw/>
- Wednesday 17th June 2026:
IRGON will be delivering a presentation to the Little Waldingfield Historical Society
<https://littlewalingfieldhistorysociety.wordpress.com/>

At the time of writing further dates are yet to be confirmed. But the following talks and/or onsite visits are provisionally planned for 2026:

- Bentwaters Open Day
- National Atomic Testing Museum, Las Vegas

*Operation DIVER comes to Orford Ness Oct. 44 –
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During this final and less intense phase of the V1 campaign, it is thought that over 1000 V1s were launched of which over 600 were logged by the defences. Given the flat nature of the coastal landscape, the bombs flew in unusually low, which was compensated for by lowering the stops of the two outside guns to enable them to track and fire at lower angles. With so many guns in close proximity firing at such high rates, fire control would have been challenging and the noise and potential danger for local residents must have been significant. By this stage, however, gun crews were extremely proficient at dealing with these weapons and an average of 65% were shot down over the autumn with rates touching over 80% at times. The last V1 to be launched and shot down was near the Ness on 29 Mar 1945, and not long after and once hostilities ceased, the majority of sites were vacated and later cleared. Locating such sites now, even with detailed source knowledge of their exact locations, is unsurprisingly difficult given their temporary nature, but awareness of this unusual episode is essential to avoid confusing any of its remains with other military and research activities before, during and since the war both on the Ness and its hinterland.

John Ogden
IRGON
March 2026



The global reach of Orford Ness

The eastern bank of the Alde and Ore estuary, Orford Ness, can have a desolate feel. It is hard to appreciate the international pedigree of these ten miles of cusped shingle foreland beach, with its abandoned buildings and eerie silence. Known as the Island, it still retains many mysteries.

It is believed that the Battle of Newmouth in 1012 took place at Stony Ditch on Orford Ness. The Danish invaders, led by Thorkell the Tall, fought the East Anglian General Ulfcytel. This may have been the first, but certainly not the last, foreign power to take interest in these shores.

More peacefully, the first lighthouse was built in 1637 for mariners of all nationalities, following the terrible storm in 1627 when 32 ships were wrecked on the spit. The last lighthouse built in 1792 was finally deconstructed in 2020 due to coastal erosion. In 1853, the first telegraph cable between Holland and the UK was laid between Scheveningen and Orford Ness, and the first telegram across the North Sea was to the King of Holland.

When the Royal Flying Corps built its airfields on the island in 1915, it sought a site with windy coastal conditions for its experimental work. There was a German Prisoner of War camp on the Ness, but less widely known is that in 1917 roughly 40 members of the Chinese Labour Corps also arrived on Orford Ness. Approximately 96,000 Chinese labourers were employed by the British following the huge loss of manpower at the Battle of the Somme. This small contingent built the flood defence, still known today as the Chinese Wall. Although the wall was rebuilt in the 1950s, a remnant remains as a reminder of these unexpected visitors to the Island.

As the Wehrmacht overran the Low Countries in May 1940, Orford Ness had an unusual visitor. At 05:30 am, only a few hours before the Dutch surrendered to Germany, Justus Heyman managed to land his Koolhoven F.K. 54 light aircraft on the Ness despite obstacles erected to deter air landings. This was probably the last aircraft to escape from Holland.

In November of that year, Salvadori Pictio, flying

an Italian Fiat C.R. 42 Falco sesquiplane fighter, was forced to crash land on Orford Ness. He had been providing an escort for a bombing mission to Harwich. The pilot was quickly apprehended. There was considerable excitement when it was discovered that the plane was loaded with plentiful supplies of Chianti and Parmesan cheese. It is reported that, before the pilot was handed over to the authorities, this bounty was enjoyed by the senior officers and the pilot. The aircraft is now on display at the RAF Museum in Hendon.

One of the main research activities taking place on Orford Ness was the testing of vulnerability and lethality. These tested enemy weapons and ammunition (particularly German) against vulnerable parts of allied planes and vice versa. After WW2, Swiss weapons and ammunition were also tested on site.

Orford Ness received innovative new German technologies, especially through the operation of T Force. This unit operated ahead of the front line in 1945 and acquired both scientists and technology before they fell into Russian hands. Highly specialised captured equipment, such as kine-theodolites, which monitor the trajectories of bombs and missiles, is documented as having been used at Orford Ness.

In the Cold War, the alarm caused by the Russian launch of the Sputnik satellite required the Orford Ness boffins to develop new tracking equipment, the first but by no means the last link to Soviet activities. Orford Ness managed to monitor the French nuclear test explosions in the southern Sahara in 1960, using locally developed technology.

One of the main activities on Orford Ness was bomb design testing, and in particular, the trajectory through the air once released from an aircraft. However, Orford Ness had its limitations, especially due to the weather. As aircraft were getting faster and bombs were being released at higher altitudes, there was a need to find a larger test area that had more predictable weather. The British and Australian Governments developed a new site at Woomera in Western Australia. Australian staff were sent from 45°C Woomera to freezing conditions on Orford Ness to be trained on the relevant bomb tracking equipment. Bespoke

specialist equipment, such as sand-proof cabinets, was designed at Orford Ness by the technical experts from the Royal Aircraft Establishment. The local draughtsmen were never told of the cabinets' final antipodean destination.

The most prominent building on Orford Ness is the giant grey box and aerial array known as Cobra Mist, which was built in the early 1970s. It had originally been destined for Turkey but, due to diplomatic difficulties, was relocated to Suffolk. However, both Turkey and Norway installed static reflectors to help calibrate the Cobra Mist system. Costing over £1bn in today's money, this US / UK over-the-horizon radar system was designed to monitor Russian missile activity. It was suddenly closed in 1973, and there was much unproven speculation that it had been included in the SALT II nuclear arms treaty. More probably, however, is that Cobra Mist was closed due to escalating costs and technical problems, exacerbated by jamming activity from Russian ships. The BBC World Service Russian-language service was broadcast from the site to distant shores until funding was withdrawn in 2012. Today, it broadcasts Radio Caroline on medium wave.

International visitors today are no longer military but are just as important. These include Lesser Black-Backed Gulls (*Larus fuscus*) that migrate from Western Africa in summer and Black Tailed Godwits (*Limosa limosa*) that migrate from Iceland and Greenland in winter. Some of the Grey seals (*Halichoerus grypus*) from the recently established breeding colony on Orford Ness have been identified on the German and Dutch coasts. As the site is reclaimed by nature from its more sinister past, there is a risk that its place in global history will be lost. The International Research Group Orford Ness (IRGON) has been working with the National Trust and the Cobra Mist Company to uncover and document what really happened in this mysterious place.

You can visit the National Trust site from May onwards. For details, please see: <https://www.nationaltrust.org.uk/visit/suffolk/orford-ness-national-nature-reserve>
Please note: There is no public access to the Cobra Mist site.

Bill Parker

