

GUARDIANS OF



ABOVE
A contemporary
image of
Sealand fort.
(ALL IMAGES
VIA AUTHOR
UNLESS NOTED)

Venturing out of the Thames Estuary and into the North Sea, a cluster of colossal, ghostly figures appear through the mist, guarding the water like gigantic robots. These huge, rusting 20th century sea forts are the brainchild of Guy Anson Maunsell, an under acknowledged civilian who made a huge contribution to the UK's defences, especially during the Second World War.

From the outbreak of fighting in 1939, the British and Germans began laying mines to assert their naval dominance. Within a week of Chamberlain's declaration of war in September 1939, two British merchant vessels, *Magdapur* and *Goodwood*, had succumbed to mines laid by German

RIGHT
Red Sands Fort.
(RUSS GARRETT)

U-boats in the North Sea. Many would follow in the months ahead, with 200,000 tons of shipping lost throughout October and November, and some 200 lives claimed over the course of three devastating days in November.

As the conflict gathered pace, increasingly more British ships were sunk or damaged in and around the Thames Estuary. The Kriegsmarine had the technological upper hand, largely due to luftmines laid by the Luftwaffe. These new magnetic influence naval mines were particularly effective as direct contact wasn't necessary – simply being in the vicinity of a large steel warship or submarine was enough to detonate their deadly loads.

While the immediate loss of each individual vessel was tragic, the resultant disruption was catastrophic. In effect, entire regional shipping came to a standstill as minesweepers were brought in to clear the channels. With Britain cut off from the rest of Europe

by early summer 1940, the country depended on its maritime supply lines.

Converted paddle steamers fitted with 40mm Bofors guns were tasked with patrolling the Thames to deter enemy mine-laying aircraft. This wasn't ideal, so the Admiralty sought out a better, more permanent, solution. It turned to civil engineer Guy Maunsell, who had gained acclaim for pioneering large reinforced concrete structures, notably the Storstrøm Bridge in Denmark (1934). Maunsell had already come to the Admiralty's attention, having submitted designs for a 'Submersible Observation Post' in 1939, and a marine fort in May 1940.

DESIGN AND CONSTRUCTION

The solution would need to fulfil key objectives, namely breaking up the Luftwaffe's formations and prevent them from laying mines; deterring E-boat raids on shipping and raising the alarm on approaching enemy aircraft, freeing up patrol vessels for deployment elsewhere. Maunsell's ►



THE ESTUARY

FELIX ROWE EXAMINES THE ROLE OF THE MAUNSELL FORTS THAT PROTECTED BRITISH SHIPPING FROM GERMAN-LAID MINES DURING THE SECOND WORLD WAR, AND PROFILES THE UNSUNG CIVIL ENGINEER WHO MASTERMINDED THEM.



“...the Naval Officer in charge failed to follow this precisely, ordering the opening of the water inlet valves in haste, resulting in the fort pitching to one side and almost toppling over”

RIGHT
A completed pontoon that will form the base of a sea fort to be used in the Thames Estuary c. late 1941/early 1942.



RIGHT
Hoisting the pre-assembled cage of reinforcement for the towers into position.

response was to build a series of towers, planted off the coast in open water. As was often the case, the proposals elicited much debate, stalling and requests for alterations, before a design was finally agreed upon. It took until late March 1941 for the construction of four forts to be green-lighted.

RIGHT
A pre-cast reinforced floor section being moved into position during the construction of a Thames Estuary fort.

The final design consisted of two cylindrical concrete towers 60ft (18m) high, 24ft in diameter and 1ft thick, mounted on a reinforced concrete base. Each tower was divided into seven floors, providing room for crew accommodation and stores, including the munitions magazines. A platform above housed a weapons deck (complete with two 3.7in guns), a galley, the officers' mess, administration quarters, two Bofors anti-aircraft guns and a radar station.

Work was carried out by Holloway Brothers at Red Lion Wharf, Gravesend, Kent. Around 350 men were employed on the unprecedented task, with all resources ultimately diverted into finishing the first example: HM Fort Roughs Tower. Upon completion and fitting out, the entire prefabricated fort, weighing in at almost 4,500 tons, would be towed out and then sunk on location. This, however, was easier said than done.

It left port on 9 February 1942, but the tow to its position eight miles

(13km) east of Harwich, Essex, was fraught with difficulties, impeded by strong winds and snow en route. What's more, the consummate engineer Maunsell had devised a very specific procedure for safely sinking the pontoon into position. However, the Naval Officer in charge failed to follow this precisely, ordering the opening of the water inlet valves in haste, resulting in the fort pitching to one side and almost toppling over, potentially taking everyone aboard with it.

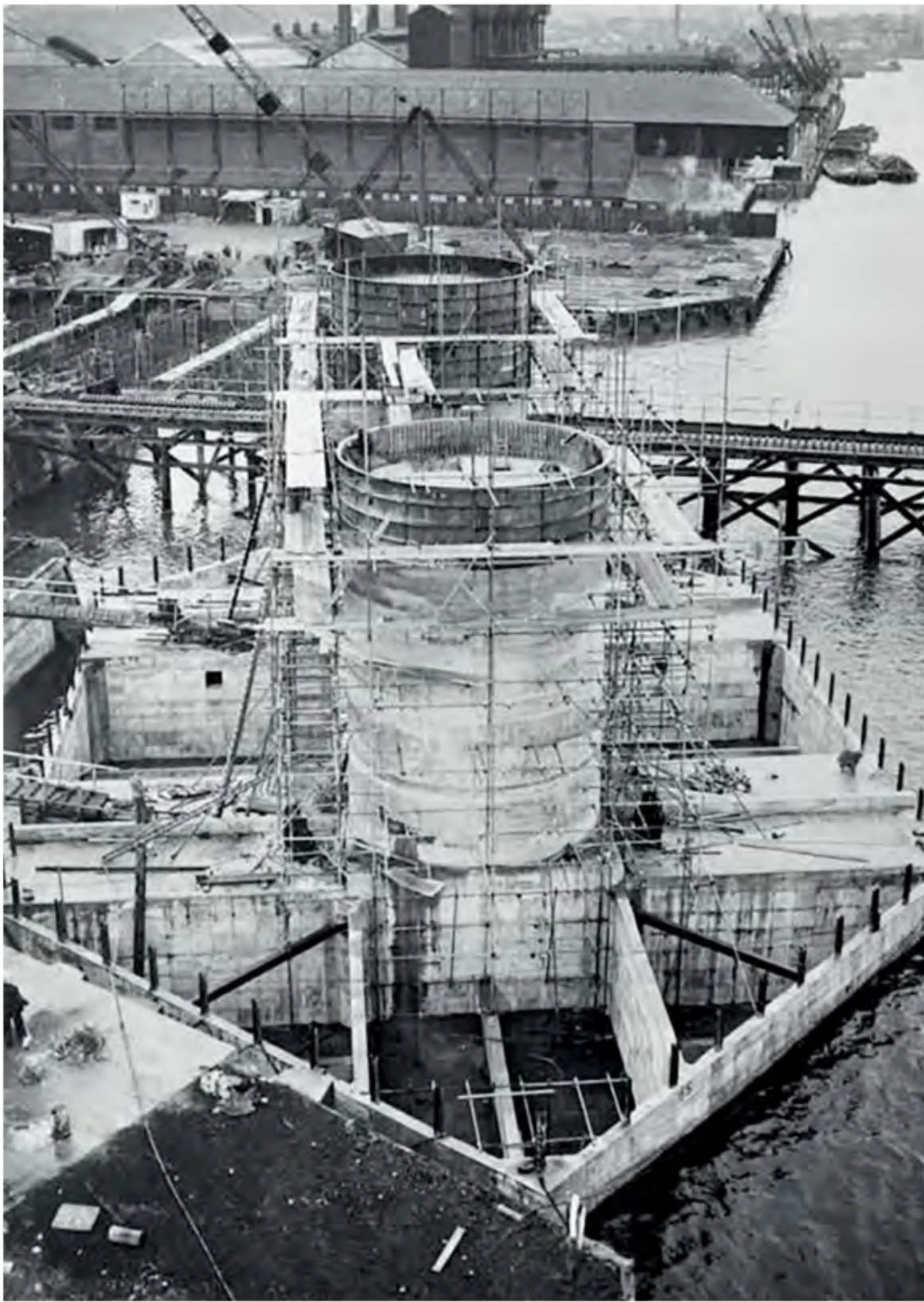
The pontoon righted itself in the nick of time. Henceforth, all succeeding forts would be sunk by civil engineers, prior to handing them over to the navy. In due course, His Majesty's Fort (HMF) Roughs Tower was joined by HMF Sunk Head, HMF Tongue Sands and HMF Knock John.

ARMY CONTRACTS

With the forts' viability and Maunsell's engineering prowess proved, he was soon presented a new challenge, designing similar structures for the army to protect the Mersey's dockyards. As pioneering as they were, Maunsell's navy forts were comparatively straightforward. His new designs for the army, however, were much more futuristic in their aesthetic. They consisted of a cluster of seven towers (a central control structure, a Bofors gun platform, four 3.7in gun towers and a searchlight mast), connected by a series of bridges in a formation inspired by military gun placements.

Maunsell's design took into account the soft sand bed that the forts would be positioned upon. Samples from the seabed were sent to Manchester University for testing, while scale models were made and evaluated off Southend Pier in Essex. Maunsell opted for a design that featured four reinforced concrete legs supporting a steel box. The Mersey forts would never fire a single shot in anger. Yet, once again their design had proved a success, leading to the commissioning of three more similar army forts for the Thames Estuary to supplement the existing naval structures: Nore (between Sheerness and Shoeburyness), Red Sands (six miles off Minster, Isle of Sheppey) and Shivering Sands (seven miles off Herne Bay, Kent).





LEFT

One of the forts under construction at Red Lion Wharf, Gravesend, Kent.

madness'. As Maunsell historian Frank R Turner notes, the forts were self-sufficient for up to five weeks, preempting bad weather or enemy activity preventing the delivery of supplies.

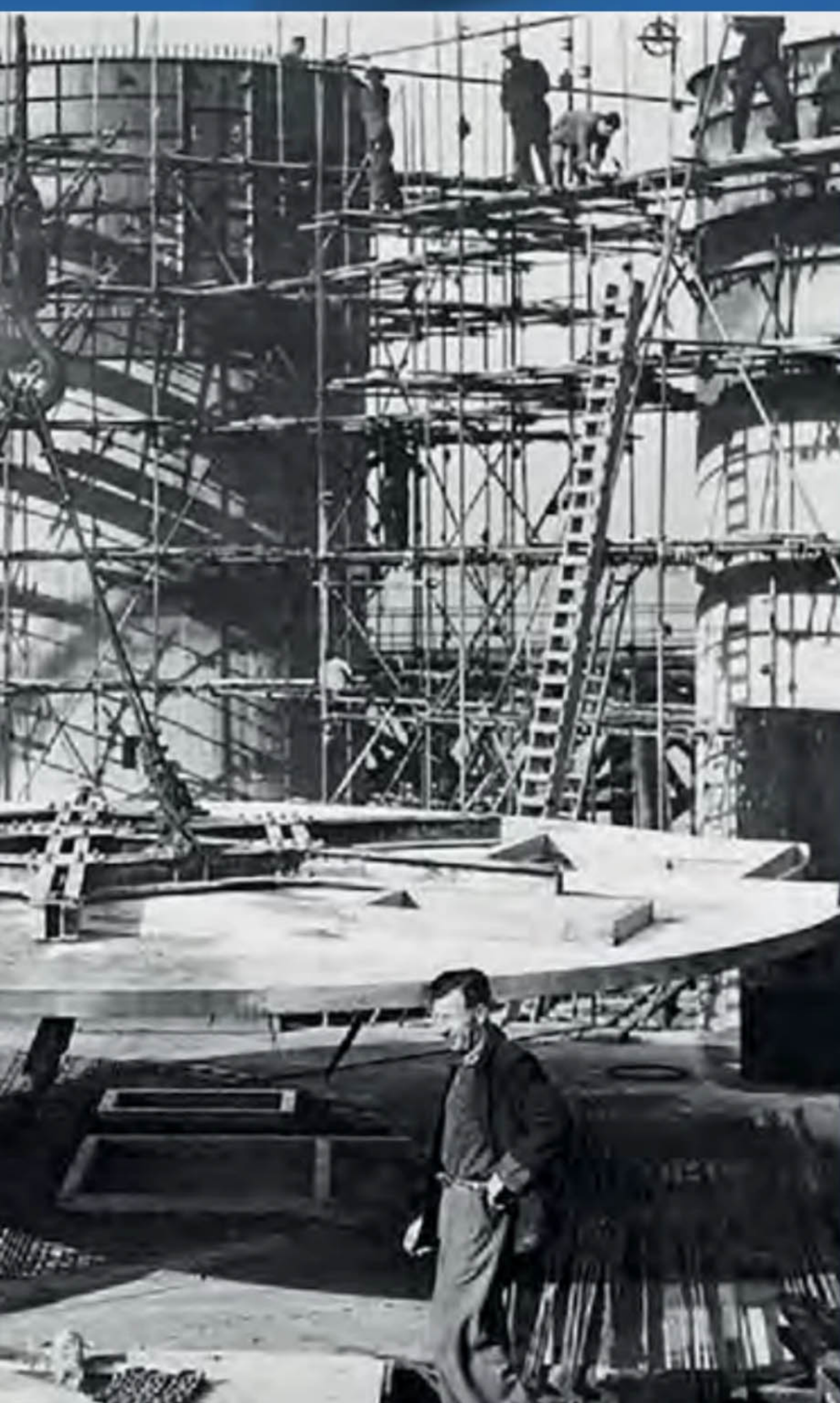
The army forts were apparently a bit more comfortable, with "plenty of light, oil-fired central heating, daily hot salt water baths and excellent food prepared in the Control Tower Cook House," according to Le Roi. They were also designed to withstand considerable movement, accounting for the blast of the guns and the shifting of the sands.

MILITARY ACTION

Between them, the Thames Estuary forts shot down 22 enemy aircraft and around 30 V-1 flying bombs over the course of the war. A typically fawning article, distributed throughout the Allied press in early October 1944, was keen to lavish praise on the forts, "bristling with guns", extolling their effectiveness in staving off the enemy. "Hitler's planes, attempting to sow mines in the estuary in an effort to cut off London from sea-borne supplies during the early blitz, met a terrific barrage of ack-ack fire... The forts' guns successfully fought off German planes planting acoustic and magnetic mines and broke up E-boat attacks on assembling coastal convoys. Later they whipped up effective fire against the robot bombs and also were used as bases for sea rescue boats." ▶

BELOW

One of the Maunsell Mersey Estuary forts under construction at Bromborough Dock. Here they are well on the way to completion with the accommodation block fitted to the four long legs that will rest on the sea bed.



LIFE ABOARD

Like most theatres of war, life could be extremely monotonous, with long periods of boredom and inactivity, occasionally punctuated by action. This was particularly amplified in a small, cramped concrete and metal 'prison cell' surrounded by water on all sides. Servicemen were typically stationed on the forts for up to six weeks at a time, with ten days back at base, before returning to do it all again. Only as the end drew closer was this reduced to just four weeks.

According to the accounts of Bob Le Roi, a radio broadcaster who later occupied one of the forts, life aboard could be dull and lonely. In the naval forts, personnel spent much of their time below deck in the concrete cylindrical towers, with little or no natural light. They did what they could to pass the time, taking up painting, drawing, carving, making models and playing cards. A piano was brought aboard Knock John, dismantled and reassembled below deck, to stave off the dreaded 'fort



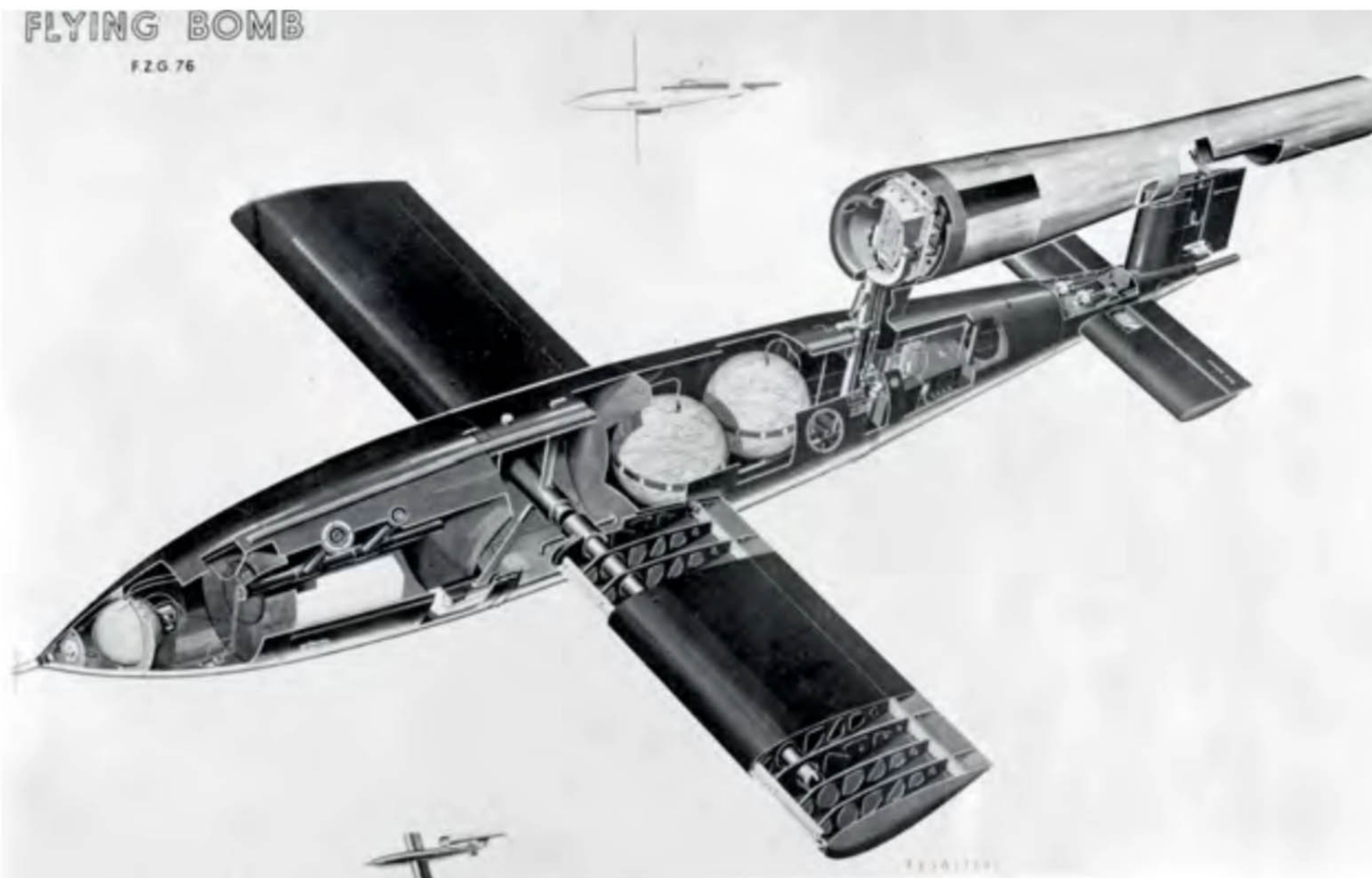
RIGHT
Anti-aircraft crews scan the sky from a Maunsell sea fort on 19 November 1943.

Indeed, in January 1945, Tongue Sands claimed the E-boat S199, after shelling a flotilla of five such craft it had picked up on the radar. However, it would transpire that the E-boats had already been engaged in action with an RAF Wellington bomber, HMS *Guillemot* and HMS *Seymour*. S199's captain, Joachim Quistorp, later admitted he scuttled the boat (which had already been damaged in a skirmish, whether from British fire or colliding with another E-boat, S701) to avoid its capture, ordering the crew to say they'd been hit. Nevertheless, the fort made its presence felt, contributing to the successful scattering and retreat of the flotilla.

Of course, it's impossible to say exactly how many lives the forts' presence might have saved – certainly hundreds, if not thousands – when considering repeat attacks thwarted



RIGHT
A cutaway drawing of a V-1 flying bomb.



by the downing of aircraft and trained crews. But the kills are just one part of the story, remembering that their very presence was meant to disrupt the efforts of the Luftwaffe and Kriegsmarine to inhibit shipping, as well as alerting the wider forces of hostile craft approaching the coast.

POST-WAR

In the early decades that followed the end of the war, the forts had an equally colourful history. Placed in reserve status, they were refitted in 1950 in anticipation of hostilities surrounding the Korean War and Cold War.

Further forts were planned around this time, but despite great expenditure on new designs, this ultimately came to nothing.

It's somewhat ironic that the fort's only British casualties occurred in peacetime, when a Swedish cargo ship, *Baalbeck*, collided with Nore Army Fort on 1 March 1953. Two of the towers were knocked over, killing four civilian men from Kent. Deemed a hazard to shipping, Nore's surviving towers were later dismantled, removed and sold as scrap. By 1956, the remaining forts were officially decommissioned and left to the elements.

Far from the end of the story, some of the structures later gained notoriety providing a base for offshore pirate radio stations in the 1960s and 1970s. Eccentric rock star Screaming Lord Sutch (founder of the Monster Raving Loony Party) took residence in Shivering Sands' gun tower, launching Radio Sutch in 1964. After Sutch returned to performing, his former manager

Reginald Calvert, took over the station and renamed it Radio City – in 1966 he was shot dead in a violent row with the owner of a rival station. Another pirate broadcaster, Paddy Roy Bates, who had served as a major in the army during the Second World War, later took control of Roughs Tower, declaring it an independent nation state, The Principality of Sealand, complete with its own coinage and stamps.

Following the ousting of the radio stations, the forts have occasionally been used in military training exercises. They've also cropped up in popular culture, from a 1968 episode of *Dr Who* to various music videos. 🕒

GUY MAUSELL – AN UNSUNG CIVILIAN HERO

Maunsell served in the Great War in the Royal Engineers on the Western Front. He was then recalled to Britain and involved in several engineering projects including working with the Admiralty on a scheme to prevent enemy submarines entering the Strait of Dover. By the Second World War he was a respected civil engineer, but was happiest tending to his herd of dairy cows, allegedly remarking that he got better sense out of them than his military superiors.

An expert in pre-stressed and reinforced concrete structures, he also played an instrumental role in the concept behind the temporary Mulberry harbours developed for the D-Day landings and other military uses. After the war, the Hammersmith flyover, designed by his company, was a pioneering example of his engineering techniques. Maunsell died in 1961, aged 77.

