Mangrove Swamp to Naval Base

On February 14th, 1938, the great British naval base at Singapore was officially opened by the Governor of the Straits Settlements. The ceremony, which was attended by American warships as well as British, marked the completion of one of the greatest engineering feats in the history of the world.

The naval base at Singapore, together with its defences and its aerodromes, had cost the Empire close upon £20,000,000. That is a measure of the work which had been involved. Singapore was an island at the extreme tip of the Malay Peninsula. It is roughly the shape of the Isle of Wight. Between it and the mainland of Malaya ran the narrow Johore Strait, known locally as the Johore Bahru.

Not so many years earlier this strait completely separated Singapore island from the mainland. Then a causeway (*left*), was built across the strait which carried a railway and a road. For years after the completion of this causeway the two arms of the strait – that to the east of the causeway was the longer and larger – were frequented only by native fishermen. They were lined with mangrove swamps full of malaria-carrying mosquitoes, and through the swamps ran creeks where the jungle met overhead and where crocodiles slept on the mud-banks. Further inland snakes and scorpions abounded, among the former was the deadly king-cobra.

Nobody would ever have dreamed that such a place (*left*), could possibly be converted into a modern naval base – which was, after all, a modern and highly specialised factory town. But in 1923 after the collapse of the Anglo-Japanese Alliance had made it necessary for the British Empire to take steps to look after her own interests in the Far East, work was started on the island shore of the eastern arm of the Johore Bahru.

Careful surveys of the land and the arm of the sea had, of course, been taken, but the task of converting the swampy ground, backed by hills, seemed impossible. British engineers and foremen, and thousands of Chinese and Malay coolies did wonders. One of the first steps was the building up of a large reserve storage of oil fuel. This, in fact, had been begun years before. Tanks were built and as soon as they were filled they were locked against emergency. It was not until 1929 that the first British warship fuelled at the Singapore naval base.

As ships steamed up the strait, there was little enough to show the magnitude of the work which was going on. There were a few buoys laid out in the strait, and a couple of dredgers were at work. But the main part of the task was going on behind a dark green screen of jungle. From behind it one could see

rising puffs of smoke and steam and hear the creaking of straining excavators and the thuds of pile-drivers. That was all.

Further up, at the fuelling depot, an old store ship had been moored to serve as a floating jetty and depot ship. The oil came to that floating jetty in pipes laid from the invisible tanks. Much of the oil fuel storage at Singapore was underground – it was estimated that there was sufficient fuel stored at Singapore to keep a large fleet supplied for six months even if no more fuel arrived. And those tanks which were not underground and bomb-proof were invisible from the air, hidden in the natural camouflage of the jungle.

In the years that followed, men steadily gained on nature. Swamp gradually but definitely gave way to firm ground capable of supporting dock railways, or to deep water capable of allowing the largest warships to come alongside the newly formed jetties.

In the meantime, a great floating dock (*left in 1941*) – the largest floating dock in the world – was built in England. It was destined for Singapore, but it was obvious that a structure of such a size could not be taken in one piece from Europe to the Far East. It was taken to Singapore in two parts, towed by several tugs. The whole of the Suez Canal had to be cleared for the passage of each section of the dock, and even then, there was just a foot or two between the sides of the great steel structure and the banks of the canal.

When the great floating dock eventually arrived at Singapore and was moored in the Johore Strait it dominated the jungle for miles around. The steel cliffs of the dock sides, surmounted by the four funnels of the dock pumping machinery, were a landmark from both sides of the strait. Small wonder. It was the biggest floating dock ever built – capable, by the flooding and pumping out of tanks, of lifting a ship of fifty thousand tons displacement clear out of the water.

It had taken more than eight million cubic yards of earth to turn the mangrove swamps into firm earth for the sides of the naval base. Much of this earth had been taken from the hills in the vicinity. Some hills had been removed altogether to make way for workshops and other buildings. Others had been hollowed out in order to provide bomb-proof storage for oil fuel, ammunition and other combustible stores for a fleet. It has been estimated that more than six million cubic yards of earth had been removed from the surrounding hills.

Something rather more than seventeen miles of railway lines serve the base itself, and large buildings had been erected as store houses, workshops and barrack. The sides of the docks and jetties were fitted with cranes capable of lifting anything up to one hundred and fifty tons. In other words, one crane could lift out the largest gun mounted in a modern battleship: the sixteen inch guns of H.M.S. Nelson and H.M.S. Rodney weighed about one hundred and seventeen tons each.

One of the greatest engineering feats in the preparation of the Singapore naval base had been the building of the great graving dock (*left, Queen Mary in the graving dock in 1940*). To appreciate the difficulty of making this dock, it must be realised that the sides of its site were in the first place nothing but porous marsh. British engineers however, overcame every difficulty. The new graving dock, capable of dry-docking the largest ships in the world, was almost one thousand feet long and one hundred and thirty feet wide. It was built into a foundation of firm, although largely artificial, land, and was lined with thousands of tons of reinforced concrete.

A little way to seaward of the naval base lay the air base, which was complimentary to the former. Flying boats lay at moorings in the water at the foot of a sloping lawn from the headquarters building. That however was in the early days. In 1938 Singapore did not depend for its air defences solely upon a single flying boat squadron. Inland there was more than one aerodrome from which fighters could leave at a moment's notice in order to harry any raider.

Science had played no small part in the making of the great naval base at Singapore. Brave men had given the best of their lives to this base without any hope of recognition. But their work lived after them.

A Poor Effort

When war did come Singapore fell to Japan on February 15th, 1942, after a swift 70-day invasion, marking the largest surrender in British history. Lieutenant-General Arthur Percival surrendered 130,000 troops to Japanese forces (*below*), despite outnumbering them, due to poor defences against land attacks, low supplies, and superior Japanese tactics. The island endured a brutal three-and-a-half-year occupation until 1945.