

Coastal Defence and Zeppelin Raids 1914 - 1918



Image courtesy of Littlehampton Museum

By Martin Dale

Summary

This Case Study explores what was done to defend the West Sussex coastline from a possible German invasion, from hardened fortifications to the men who patrolled the coast every night during the War years. Special attention has been given to some of the more interesting or noteworthy features of the defence works, such as the Selsey Sound Mirror and the infamous 'Shoreham Mystery Towers'. This Case Study also briefly explores the inland defences to show how the two areas – coast and inland – were inextricably linked when it came to organising anti-invasion measures, particularly when the coastal defence area stretched some ten miles inland. Furthermore, this Case Study delves into the Zeppelin raids that flew over this county, how the threat from air raids was handled and the impact it had upon the people of West Sussex.

Introduction

I decided to research this topic of coastal defence and Zeppelin raids after having spent a number of years investigating the anti-invasion defences of the Second World War in West Sussex, and the air war during the Battle of Britain and the Blitz. Like many people, I already knew about the famous battles of the First World War in France, Belgium and around Gallipoli for example, but I had very little knowledge of how the War was brought to the Home Front, and this Case Study gave me the perfect opportunity to explore just that. As I delved deeper into the Zeppelin raids on England and Scotland and the county's coastal defences, I saw striking similarities between the two World Wars, and how the authorities in 1939-1940 were able to learn from the mistakes made in 1914-1918.

Background

Although the threat posed by Zeppelins was known well before the outbreak of War in 1914, the Military and Governmental establishments and citizens alike did not think it possible for one to be able to cross the English Channel or North Sea to reach England with hostile intentions. Similarly, it had been over a century since the British mainland was under threat from a foreign invasion force and the popular expectation in Britain on the outbreak of the conflict was the now almost legendary stance of 'it'll all be over by Christmas'. In 1914, West Sussex was still a largely rural county with agriculture-related occupations being the mainstay of the male population, whilst the women and older girls undertook the household chores or entered into domestic service for the more affluent families. Many of the large villages and small towns that we know of today, such as Pulborough or Billingshurst, were little more than small, rural settlements. In the towns, the population tended to be employed in work such as Market Gardening and the beaches at Worthing, Selsey and Bognor Regis were popular holiday destinations during the summer months.

With the exception of Shoreham-by-Sea, there were no airfields in West Sussex in the lead up to the War and the only defences were remnants of long-forgotten perils – the Napoleonic forts at Shoreham and Littlehampton for example. Aviation was in its infancy, with the world's first powered flight of an aeroplane having only taken place in 1903, and



An early military airship, possibly the army airship Beta II, above Crawley circa 1914. Courtesy of West Sussex Past reference number PP/WSL/L000508

lighter-than-air craft also proving to be little more than curiosity pieces for the wealthy and adventurous. By 1918, several new airfields had been constructed at Ford, Tangmere, and Rustington, but all these were training airfields, and with the exception of a single Martinsyde S1 Scout armed with incendiary bombs based at Shoreham¹, none of the county's airfields were used for the defensive role. Britain had fought successfully in smaller battles in the recent past and the expectation in 1914 was that a small army would march happily across France and into Germany and be back with their families in England in a few months time and peace would return to Europe once more.

Count Ferdinand von Zeppelin had been experimenting with his gigantic airships in Germany, with the first flight occurring in 1900. He had many mishaps along the way, but each successive vessel that was produced became evermore efficient. The rigid airship was, despite its enormous size, an extremely fragile vehicle that was reliant on good weather to be able to fly – it really shouldn't have been thought of as a vehicle capable of waging war. However, the German people found immense pride in these majestic creations, the incredible feats of engineering that was required surpassed that of any other nation at the time and the German Naval authorities saw great potential in them. Most people in West Sussex had probably never even seen a single man-made flying object, and with the exception of a few forward-thinking individuals, it can safely be said that no one ever thought that England would ever be threatened with War on its own soil.

Detail

Coastal Defences

The West Sussex coastline was not as heavily fortified as you might have first thought. The Imperial Defence Committee of the War Office had dismissed any chance of a successful German invasion unless the Royal Navy had been defeated first, and that whilst small-scale naval attacks upon the English shoreline was a possibility, the Committee considered this only really possible for the east coast. The English Channel, it was thought, was well protected by the joint British and French naval forces and no enemy vessel stood any chance of being able to get within sight of the south coast². Instead, the only place in the whole of Sussex to have received any significant defensive armament was Newhaven Fort in East Sussex³ which had two six-inch guns installed – this being considered all that was necessary to ward off any hostile ships that might have entered the English Channel and strayed too close to the shore⁴. West Sussex had two nineteenth Century forts at Shoreham and Littlehampton, but these had both become obsolete with the advances in artillery technology and their defensive walls were now far too thin to have stood any chance of

standing up to a direct hit. Re-fortification works at the two forts were considered by the military authorities, but for the reasons just explained, no such actions actually ever came about. Littlehampton Fort had been decommissioned for over two decades by 1914, but Shoreham Redoubt had been retained as a military garrison. Its outdated smooth-bore guns were removed and replaced by two 80-pound and three 60-pound rifled guns which would have been capable of inflicting some damage on an invading force⁵. Littlehampton, it would appear, did not have any hardened field defences but did have a contribution to the coastal defence of West Sussex and elsewhere in the form of a workshop run by a Mr Hubert Williams at Fisherman's Quay which manufactured the hulls of seaplanes that were transported a short distance to the Norman Thompson Flight Company factory at Middleton-on-Sea to be completed⁶, and Harvey's Shipyard who built small boats for the Navy⁷. The Hubert Williams & Company 'Britannia Works' factory soon became a subsidiary of White & Thompson – later Norman Thompson Flight Company – and built most of their flying boat hulls during the War⁸ as well as independently building at least eight Felixstowe F2A hulls in 1917-1918⁹ whilst another Littlehampton-based company, James Linfield & Sons Ltd at New Road carried out all the major construction work for the Norman Thompson factory at Middleton-on-Sea¹⁰. Additionally, a Civil Guard Corps was formed in the Town shortly after the War began in August 1914 which undertook a nightly patrol of the coast throughout the winter of 1914-1915. This later developed into the 'C' Company, Volunteer Training Corps



A member of 'C' (Littlehampton) Company Volunteer Training Corps on guard at the old Swing Bridge over the Arun. Image courtesy of Littlehampton Museum

affiliated to the Central Organisation. At this point, however, the men were still in civil dress and unequipped other than with what the men had to hand – rather reminiscent of the early days of the Local Defence Volunteers in the Second World War! A public appeal for funds was made to purchase better equipment. In the early months of 1917, the requirements of the Corps was changed, and the men were asked "To enter into an agreement to serve for the duration of the War, and submit to a more definite and strenuous course of training." For those men who were able to pass a test, the Government agreed to provide new uniforms, arms and equipment necessary for the enhanced role, but only a relatively few members were able to pass the test and so the remainder were required to once again provide all their own equipment. The Corps applied to the Littlehampton Urban District Council for financial assistance, but the application was declined and so another public appeal was launched. Approximately 230 men passed through the Corps between 1914 and March 1917, many going on to serve with the regular armed forces, and for the winter of 1916-1917, the men of 'C' Company once again "nightly performed important Military duties to the entire satisfaction of the Authorities¹¹."

Meanwhile, at the Norman Thompson Flight Company's factory at Middleton-on-Sea – a largely forgotten and unknown part of West Sussex aviation history – a number of aeroplane designs, mostly seaplanes, were developed and constructed for delivery to the Royal Naval Air Service (RNAS) and Royal Flying Corps (RFC). In total, at least 232 aircraft of 11 different types were constructed at Middleton-on-Sea, with 14 further Norman Thompson aeroplanes being license built elsewhere by other companies. Orders were placed for another 110 aircraft (of which 35 were due for construction at Middleton-on-Sea), but were cancelled. Twenty aircraft orders that were placed but for which no evidence exists for delivery have not been included in the above totals¹². It was the result of the government contract cancellations made upon the cease of hostilities in late 1918 that hit the company hard and the decision was made to close the business in 1919 and all the assets were sold to the De Havilland Company¹³. Regarding this latter point, Chris Butler states that the company was acquired by Handley-Page¹⁴ and this would appear to be the most common assertion from other sources also. During the War, it would appear that many of the aircraft made at the site either went into use as training platforms or in the Home Defence and Coastal Patrol duties. However, at least three of the aircraft built at Middleton-on-Sea were actively involved in sorties launched against German air raids on England. The first such example was a White & Thompson No.3 Flying Boat, serial number 1197, flown by Flight Lieutenant C A Eyre and based at RNAS Dover took off from the water on the late morning of 20 March 1915 to search for four incoming German aeroplanes (three were Friedrichshafen FF29 floatplanes and the fourth was an Oertz FB3 flying boat) en-route to attack coastal shipping off the Kent coast. Although Flight Lieutenant Eyre made no sighting of the enemy, no damage or casualties were caused on this occasion¹⁵. On 19 August 1915, this same aeroplane also flew an anti-



'The Battle on the Sea' dated 27 March 1915. Image courtesy of Littlehampton Museum

Zeppelin patrol flight from RNAS Dover¹⁶. The next record of a West Sussex-built aeroplane seeing active service occurs on the night of 24-25 April 1916 when six Naval Zeppelins were targeting London, including Heinrich Mathy's old airship, the L13. RNAS Felixstowe based Short S38, serial number 8438, and

crewed by pilot Flight Sub-Lieutenant C J Galpin and his observer Flight Sub-Lieutenant A M Pinn, was the fifth such airframe of the type that was license built by the Norman Thompson Flight Company at Middleton-on-Sea. Again, this aircraft made no sighting of the enemy force¹⁷. The final record encountered was for the night of 25-26 September 1916¹⁸, of which more detail can be found later in this Case Study. Additionally, a full listing of Middleton-on-Sea produced aeroplanes can be found as Appendix One at the end of this Case Study. Most of the Norman Thompson NT4 flying boats were impressed into anti-submarine patrols until an

unexpected policy reversal was made on 25 January 1918 removing all single engine aircraft from this role¹⁹. Of interest also, although just outside West Sussex, was the establishment of a seaplane base at Brighton Beach by Magnus and Hermann Volk and Magnus' son which was used to demonstrate seaplanes and flying boats including, in 1913, the flying boats of the Curtiss company²⁰. At this particular exhibition less than a year before the First World War began, were representatives from the German Navy²¹!

In terms of other hardened defences, very little information could be found on how the coast was defended and although maps and plans were produced during the War, these sources appear to have been lost or destroyed. At Worthing, barbed wire was placed along the beaches²² (presumably this situation was repeated elsewhere along the coast) and just outside the county boundary at Brighton there are reports that boxes of shingle were built-up along the promenade to block out the sea view following the German bombardment of Scarborough and Hartlepool²³, though how these would have protected the civilians of the city is unknown other than to give a sense of security through an 'out of sight, out of mind' situation, or perhaps in the belief that a would-be attacking ship would be unable to see the city and would therefore not be able to initiate a bombardment. The best source of hardened defences, although confined to the Selsey Bill area only, is given by Edward Heron-Allen in his 'Journal of The Great War'. In early November 1914 a Company of the defence forces at Selsey, under the command of an officer named Babington, were ordered to:

"dig trenches in the middle of some fields on the Chichester Road about halfway between the tramway bridge and the turning off to Chichester and Church Norton...They extend for about 100 yards only along the bottom of a field half way between the road and the sea...On that side of the road, also for about 100 yards, they have cut down the hedge-bank...to form a breast-work for shooting from²⁴."

There was also a line of trenches dug on the cliffs at the end of "New Road" (now called B2145 Hillfield Road) and a gun emplacement built at the end of West Street²⁵. Additionally, in late July 1917, a searchlight post was established in Selsey to illuminate any hostile aircraft en route to Portsmouth and Edward Heron-Allen ascertains that an anti-aircraft gun was also to be located in the area as part of a chain of such installations around the coast, although whether the gun arrived in Selsey is not mentioned by him²⁶. Between this time and August 1918 another searchlight battery and the Sound Mirror were established in open ground that now sits at the junctions of Beach Road, East Beach Road, Constable Drive and Marisfield Place²⁷, and just a short distance west of this, roughly where Allandale Close just off the Manor Road is now located, was the Selsey Tramway Station, where, according to Edward Heron-Allen, by mid-August 1918 a large amount of wood and other building material had been gathered and stored ready for the construction of a series of timber-reinforced square pits dug in the ground every few yards between Bognor Regis and West Wittering in which were to be located Maxim Machine

Guns in preparation for a possible landing of German troops on the Sussex shore²⁸. Furthermore, a railway carriage was kept next to the Ferry Road at Selsey, which was packed full of high explosives and was to be used to destroy the road and prevent its use by an invading force²⁹.

The thought of an enemy being able to set foot upon a Sussex beach was considered most improbable in 1914, and so the responsibility for the defence of this stretch of coastline fell to the reservists. A Central Force was formed, consisting of nine Territorial Divisions and two Yeomanry Divisions, which were held away from the coastline³⁰ under the command of Sir Ian Hamilton, who had control of the West Sussex coastline as far west as Chichester from his Headquarters in Tonbridge, Kent. As the reservists were kept inland and away from the coast (this being considered to stand the best chance of hindering an inland advance by an invader), a patrol of civilian cyclists was given the order to 'man' the actual coastline itself, and keep a watch over the beaches and Channel. As the War progressed beyond expectations into 1915 and the likelihood of a German invasion increased, this unlikely mix of civilian watchmen with reservists in the rear was disbanded and Field Marshal Sir John French moved the Territorials and Yeomanry to the forward position – the 'high tide mark' – with the intention of pushing an invader back into the sea before they had a chance to establish themselves on British soil³¹.

Shortly after War was declared by Britain in August 1914, the West Sussex Volunteer Civil Guard was established, being similar in function to the Home Guard that we know of from the Second World War, though this First World War equivalent was designed to be of assistance to the civil authorities such as the police and medical services rather than the military. A memorandum dated 17 August 1914 from the Chief Constable of Horsham Police Station describes the duties of this Volunteer Civil Guard as being, amongst other things, to train in drill and musketry; to guard bridges, culverts, railways and telegraph lines; to escort prisoners and report anyone they suspect of being a German or Austrian; and to warn the public not to photograph troop movements or disclose anything in letters to loved ones serving abroad³². In addition, the police were able to appoint Special Constables to assist in their work. A copy of the Civil Guard Instructions can be found as Appendix Two at the end of this Case Study.

Emergency Committees were set up in every Petty Session District in the county, under the auspices of the Central Sussex Organising Committee (a Petty Session District was the area covered by what we would today consider as a Magistrates Court). The Central Organising Committee was chaired by The Duke of Norfolk and a committee of his nominees from the Mayors of the Boroughs in West Sussex; the Police Chief Constables; Military representatives of the Officer Commanding the Second Army; and a Secretary. The duty of this committee was "To evolve the [Sussex Emergency] scheme in conjunction with instructions from the G.O.C. [General Officer Commanding]" and "To supervise the Emergency Committees and collate reports of such." Under the Central Committee were the Emergency Committees comprising, in each District, the Chairman of the Petty Session Bench; the Police Superintendent; and a

Military representative, with the duty to “Work out details of [the Sussex Emergency] scheme according to local requirements.” Next in the chain of responsibility were the Police Constables and Head Special Constables with the function “To give each Special Constable an area. Keep a roll. Pass on all orders and see each is aware of his special work. To summarise returns of Specials.” The Special Constables had two main duties. The first was to pass down the orders given to the civil population and then see that the orders were being carried out. The second was to undertake regular patrols of their area and produce lists of items that would be of use to an enemy force, including details of how many there were of each item and where they were kept, and the population of their area. The Sussex Emergency Scheme lists some twenty six items that Special Constables were required to keep accurate lists of, in addition to them being ordered to know every path and every gap in the hedges. The following were the items that every Special Constable had to know the details of:

“Men; women; children; motors; bicycles; horses; horses with saddles; mules; donkeys; carts; carriages; other vehicles; harnesses; petrol; launches [type of boat]; lighters [another type of boat]; live stock; food; forage [wild growing food products such as berries]; tools; pick-axes; spades; shovels; saws; barbed wire; and wheelwrights.”

Additionally, each Special Constable was assigned a specific role in the event of an invasion, such as to oversee the destruction of livestock, food supplies, petrol and other stores of potential use to an enemy and also the immobilisation of vehicles³³. The Chairman of each Emergency Committee also appointed a “discreet and trustworthy Person” who was a member of the Committee to act as the Head of each Parish in the Petty Session District, and it was the duty of these persons “To know every detail within 1 mile radius, and to be in a position to produce labourers and tools when required, and generally give assistance to the Military Authorities. To calm the populations and keep them in their homes with quiet demeanour should an enemy arrive. To answer for the village, and thus possibly prevent destruction. Keep a roll of guides.” At the bottom of the Emergency Scheme’s chain of responsibility were the individual landowners and householders whose duty it was to receive official instructions from the Special Constables and to obey all orders given to them³⁴.

Despite all this, in the early months of the War, the general population were largely going about their business as in peacetime, and, as Edward Heron-Allen writes in his ‘Journal of the Great War’ on 17 August 1914, “That a Great War was in progress seemed inconceivable” after he had seen holiday makers sunbathe at Eastbourne beach as normal³⁵. Early German successes in Belgium and France during 1914 and into 1915 brought the prospect of a cross-Channel landing more to the forefront of public attention, and the issuing of notices from the Emergency Committees directing people what to do in the event of a landing only exacerbated the over-alertness of nervous young Territorial Soldiers and the rumour mongering amongst the residents of West Sussex, despite

reassurances that such an invasion was unlikely. Copies of the Chichester and Worthing Emergency Notices can be found as Appendix Three at the end of this Case Study.

Stories of spies lurking around every corner became commonplace and anyone with a German-sounding name was immediately placed at the centre of suspicion, even by those who considered themselves level-headed. One such example was the famous novelist Ford Madox Hueffer (more commonly known as Ford Madox Ford) who lived at Knap Cottage in Selsey, although in this instance Mr Hueffer's overt pro-German feelings before the War probably did not help. Many in the local area objected to his presence so near to Portsmouth, but the higher powers had no issue with him and even permitted him to join the British Army and thereby allowing him free reign to inspect all the defences along the English coastline³⁶. On the other hand was the case of Mr Sehmer of Toat Farm to the north of Pulborough, whose controversial country of birth and Germanic name was the subject of much distrust right up to the highest levels and was the feature of no less than four debates in the House of Commons between 1915 and 1919! Amongst the accusations of being a spy were him allegedly observing the activities at Portsmouth Naval Dockyard from the top of the Toat Monument³⁷ (it was of course of no importance to the rumour mongers that Mr Sehmer had actually offered the Toat Monument to the British Military at the outbreak of War, nor the fact that Portsmouth cannot be seen from the tower either), and of being related to the Krupp family – the famous German munitions factory owners³⁸. Even a man of such high repute as Paul Schweder, the owner of 'Courtlands' in Goring, was not immune from suspicions aroused by his continental family name, and was accused by Worthing Coastguardsman James Richard Goldfinch, of emitting mysterious lights from his window out to sea – it of course being of no concern to the prosecutors at the subsequent court hearing that Mr Schweder had served in the Royal Navy Artillery Volunteers, the Middlesex Yeomanry and the Army Motor Reserve, nor that two of his sons were serving in the Army (one of whom was wounded by the Germans), nor that he was in fact of Swiss descent on account of his father immigrating to England long before the War. A small fine by the Magistrates was the final outcome³⁹.

In addition to these specific examples, the following article appeared in the weekly gossip columns of the West Sussex Gazette:

"There were a party of ladies at supper, who were rivalling each other in stories of the spy-ridden state of the country. There were hundreds of spies in Sussex, they declared with composure – and names came trippingly from their tongues – "but, of course, the police are bribed." They knew how the Bulwark was destroyed; of mysterious happenings recently on a certain super-Dreadnought; of the airship which passes over the heads of unsuspecting Sussex people, piloted by a man who a few days later is shot as a spy; how a certain admiral one morning missed his wife to whom he had been married twenty years, and found that she had fled to Germany with all his papers; and how the Channel is "simply bristling with submarines, and "that is why we can send so few

transports across." And they ended by describing a naval battle which had been seen – yes actually seen – from their windows in a Sussex coast village. They should write to some London papers⁴⁰."

At Pagham Harbour, in the account of Edward Heron-Allen writing on 17 October 1914, "Mysterious foot-marks, and the scoring of boats' keels have been observed upon the mud banks at low-tide, which fills Selsey with alarmist tales⁴¹", and again writing on 9 July 1917, he informs us of a story related to him that a German submarine was captured by the Royal Navy and towed into Portsmouth where upon the search of the Commander a bill from the Royal Bath Hotel at Bournemouth dated just two days previous was found⁴² (note that no evidence of this having actually occurred could be traced during the research for this Case Study).

Whilst we may now laugh at these kinds of stories, and though it may seem that this type of behaviour has little to do with coastal defence, it had a very real effect upon the people of West Sussex at the time. Paul Holden mentions in his book how "jittery territorials fired at fishermen who were mistaken for German invaders⁴³" and how Worthing residents were forbidden to take pleasure craft more than a mile out to sea and fishing boats not more than three miles else face the risk of being fired upon by British ships in mistake for German invaders⁴⁴. Valerie Martin explains on her website how Worthing fishing boats were dragged as far inland as possible to hide them from the Germans⁴⁵ and Edward Heron-Allen vividly describes a near-miss with one soldier of the 9th Battalion Hampshire Yeomanry:

"One night I heard a patrol approaching and crouched down on the sand so as to look like a lump of seaweed in the dark. A military guard came along with his attendant Scout, and the latter said 'Look at that lump of weed – it wasn't there when we passed before'. 'Rot!' replied the Tommy, 'you see Germans everywhere.' 'Well,' said my Scout, 'I know it wasn't there. Fire a bullet into it just to see!' I thought it was time to call out, and explain that I was not seaweed. As it was, the territorial nearly fired before I had had time to explain⁴⁶."

As can be seen, the near constant bombardment of rumours about spies and German invasions, including from the media, mixed with a genuine belief that these rumours were true had an immense effect not only upon those living along the West Sussex coast, but also upon the men guarding it against such threats. It even became an offence, with a penalty of £100 fine (about £4300 today⁴⁷) or six months prison sentence, for citizens to have a fire lit after sunset⁴⁸ or to keep pigeons without a permit⁴⁹!

Another factor of the coastal defence that is today more synonymous with the Blitz rather than the First World War was the implementation of a blackout during night time hours⁵⁰ and, in some areas, the removal of signposts⁵¹. Police Stations throughout the county were issued with notices directing them on what to do if the invasion alarm was sounded, such as this one issued to PC Ernest William Goble at Horsham:

“On the occasion of a raid on the coasts and the G.O.C. [General Officer Commanding] has decided that a State of Emergency exists. It will be necessary for all Constables and Special Constables to come on duty at once, and those who have not received instructions as to what they should do beforehand will attend at the Police Station and wait for orders. The Civil Population should be advised that it is best for them to remain in their houses. Any Civilian carrying firearms should be told to take them at once to the Police Station and hand them over where they will be put in one place and locked up. A great many people will rush to Railway Stations therefore the Police and Special Constables will be told off [*sic*] to contain them and prevent a panic as much as possible. Those people who are bent on leaving the towns, ect. [*sic*] should be directed to take the roads that are not scheduled for their use of troops and must not be allowed to take the roads the troops require. Instructions will shortly be issued as to what roads are reserved for the Military, which are to be used by the Emergency Committees, for the removal of stock and transport, and where transport is to go. Constables must make themselves acquainted with all the arrangements undertaken by the Emergency Committees as there will be no time to apply for instructions when the emergency arises. The same directions apply to towns and to rural districts except that those who live in lonely places should be advised to go into towns or large villages, especially does this apply to women, girls and children. Any civil guards that are not employed under the Emergency Committee could be used at crossroads etc to direct people, stock and transport⁵².”

In Selsey, as recorded in the Parish Council minutes of 13 April 1915, the situation was slightly different with the Chairman stating that residents were to all meet in Crown Square where transport would be waiting to take everyone inland to safety⁵³, whilst in Worthing the inhabitants were told to collect as much food, money and blankets as they could carry and make for the South Downs⁵⁴ whilst warning notices were posted to inform people as to the lighting regulations in the event of an enemy aircraft raid⁵⁵. Edward Heron-Allen further informs us of the orders being given in Selsey to send all women and children as far inland as possible (possibly via the awaiting vehicles in Crown Square) and for all hotel owners to destroy all their stocks of wines, spirits and food and set light to their premises⁵⁶!

The final part in the story of the West Sussex coastal defences, and one that should not be forgotten, was the valuable service provided by the Boy Scouts. These boys aged fourteen to sixteen accompanied the Home Defence soldiers and Coastguards on patrols of the coast and acted as messengers to run between the patrols and the relevant watch office or station, as well as undertaking guards of bridges, culverts, telegraph posts and other vulnerable points⁵⁷. When the Scouts were not on duty, they were instructed in signalling, life-saving and other such activities which enabled them when they became of conscription age (and often beforehand too) to enlist with the army⁵⁸. The Scouts, many of whom came from inland towns and villages, and as far away as London, were

billeted in the Coastguard stations along the coast where they lived, cooked and slept when not on patrols. In one case, at Felpham, a large houseboat was anchored on the shore for the Scouts to use as billets⁵⁹.

Shoreham Mystery Towers

One of the most extraordinary projects for the defence of the English Channel towards the end of the War was to be built at Shoreham Harbour.

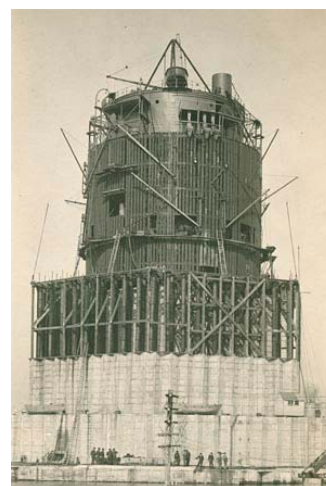


The two Mystery Towers circa 1918. On the left is the completed Tower with naval flags displayed. Courtesy Marlipins Museum reference number PP/SHORM/89.1232 (www.westsussexpast.org.uk)

Goodwin Sands near Dover and Dunkirk⁶² and then sunk to the seabed and with enormous anti-submarine net booms suspended between them. Each tower was 190 feet tall, standing on a vast hexagonal base some eighty feet tall⁶³ and 195 feet wide and built in three hexagonal tiers, each being 27 feet high, but each one narrower than the one upon which it stood⁶⁴. At the summit a further 100 feet tall⁶⁵, round metal section provided the accommodation and stores for a garrison of 90 men and their accompanying anti-aircraft gun⁶⁶.

Shoreham was chosen as the location to build six of these towers⁶⁷ owing to its shelter from the sea and the shingle beach giving a plentiful supply of material for the concrete production. Unsurprisingly, a large workforce was required and more than 3000 non-combatants were drafted to the Shoreham area to begin work⁶⁸, and were housed in a temporary hutted encampment at

Despite the assumption in 1914 that the supremacy of the combined Anglo-French surface navies would have been able to prevent any enemy vessel from entering the English Channel, by 1917 the rate of loss of merchant shipping by German submarines necessitated the investigation of unorthodox methods of dealing with this problem. One of the plans put before the Admiralty met with their approval and the quiet Channel harbour at Shoreham was chosen as the location for the construction of the top secret project codenamed "M-N"⁶⁰. The plan, thought up by Royal Navy Captain D Munro and designed by Admiralty designer G Menzies⁶¹, was to construct a series of 16 towers, capped with defensive armament and a garrison of men, which were able to be floated out to location between the



One of the Shoreham Mystery Towers nearing completion circa 1918. Note the men on the base for scale. Courtesy of Marlipins Museum reference number PP/SHORM/89.1229 (www.westsussexpast.org.uk)

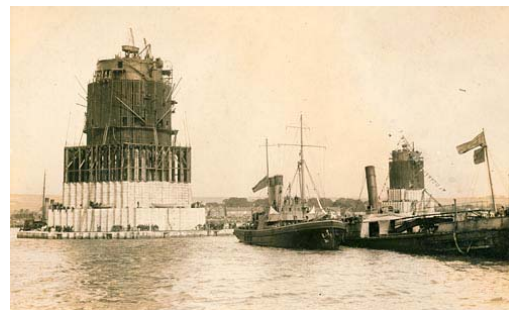


Aerial photograph of Shoreham Harbour circa 1919. The Mystery Towers can be seen in the lower left corner and the workers hutted encampment is on the right. The Slonk Hill army camp is at the top-centre. Courtesy of Marlipins Museum reference number PP/SHORM/93.2220 (www.westsussexpast.org.uk)

Southwick Green⁶⁹. The construction site was located near to the entrance of the harbour, where the current Southwick B Power Station is located⁷⁰, and a barrier was built across the estuary for a railway line to be laid to transport materials to the construction site⁷¹. The plan was to tow the towers out to their intended resting place in the channel and submerge them

permanently into position. To do this required a great deal of engineering expertise and the solution was to build the tower with a reinforced concrete honeycombed internal structure, which gave the tower a huge amount of strength whilst allowing them to be light enough to float freely in the water. As the towers rose into the Shoreham skyline, rumours were abound as to the purpose of these top secret giants. Amongst the observations, the towers were said to be recovery vehicles for salvaging sunken ships by sinking over a target, grappling itself to the ship and then re-floated by pumping out the water or new supports for a bridge at Gravesend. Other rumours came quite close to the truth, though probably to the despair of the Admiralty who encouraged the confusion and rumours in order to mask the reality, including the towers being to detect submerged U-boats or being mobile forts to fight the submarines wherever they posed a threat⁷². Naturally, the towers earned themselves a variety of nicknames including the 'Shoreham Mystery Towers', the 'Southwick Mystery Towers' and 'Shoreham's Ugly Sisters'⁷³. Strangely, despite all the secrecy, the towers became, by 1918, a tourist attraction with visitors being charged a shilling (£1.06 today⁷⁴) to climb to the top⁷⁵.

The amount of work required for the largely experimental construction technique resulted in a lengthy build time and a vast amount of expenditure – estimated to be in the region of £1million per tower at the time⁷⁶ (about £21.21million in today's values⁷⁷). As a result, by the armistice on 11 November 1918, only one tower had been completed, with a second nearly completed and the bases of several others lying dormant. In 1920, the completed tower was transported to the Nab sandbank off the east coast of the Isle of Wight, where it was sunk into place almost without fault (it settled on a slight angle on the seabed, but



The completed Tower being towed by two tug boats out of Shoreham Harbour 12 September 1920. The workforce are still aboard the Tower as it begins its journey. Courtesy of Marlipins Museum reference number PP/SHORM/89.1248 (www.westsussexpast.org.uk)

otherwise the operation went smoothly) and was fitted out as a combined lighthouse and Naval Defence fortification, becoming known as the Nab Tower⁷⁸. It is still in use today as a lighthouse after a £200,000 (about £402,000 in today's values⁷⁹) refit completed in 1983⁸⁰. The three dormant bases remained where they lay and in 1947, were covered over⁸¹ and eventually became the foundations of the Southwick Power Station when it was built in the 1950s⁸².



Bases of unused Mystery Towers at Shoreham Harbour in 1930. The honeycombed structure can be clearly seen. These unused bases became the foundations for the Southwick Power Station in 1947. Courtesy of West Sussex Record Office reference number Photographs/PH/16959

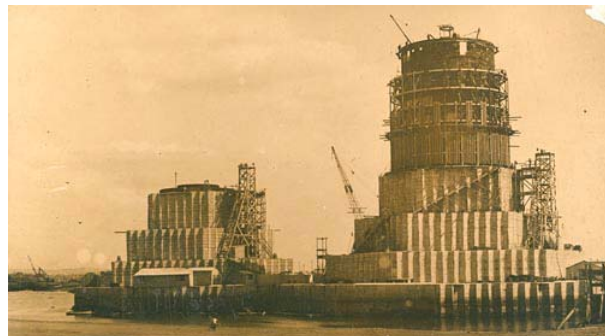
harbour with a clearance of just 2.5 feet on each side⁸⁵. The tower remained in place for several years after the War, much to the annoyance of the local population. They were the tallest structure along the South Coast at the time, and are said to have been viewable from as far away as Beachy Head and Littlehampton, and as far inland as Cissbury Ring near Findon⁸⁶. As an interesting

side note, the surviving tower, semi-submerged off the Bembridge coast, can be seen on a clear day from the South Downs south of Storrington – some six miles inland!

The problem of what to do with the tower sitting conspicuously at Shoreham, and the gross expense of its construction, became so prevalent that it resulted in three debates in the House of

Commons, one on 3 April 1922⁸⁷, the second a month later on 4 May⁸⁸ and the third on 23 May⁸⁹. Transcripts of these debates can be found as Appendix Four at the end of this Case Study. In the end, the decision was taken to demolish the million-pound, 9000 ton⁹⁰ creation and the rubble was dumped at Half Brick in Worthing, with some of it being used as the bases of the numerous greenhouses that were erected around the town in the inter-war years⁹¹.

The fate of the second, uncompleted tower was not as glamorous as that of the first tower, nor as dignified as the unwanted tower bases. The Times of 19 September 1920 reported that the Admiralty ordered its completion⁸³, but it was found to have been too wide to be able to fit through the harbour entrance which had silted up following the removal of the first tower⁸⁴ – the first tower had only a narrow 'escape' from the



The Shoreham Mystery Towers under construction circa 1918. Courtesy of Marlipins Museum reference number PP/SHORM/89.1226 (www.westsussexpast.org.uk)

Slindon Airship Mooring-Out Post

When one thinks of airships in the First World War, the first and sometimes only thought is of the giant German Zeppelins terrorising London. However, Britain had been exploring the notion of lighter-than-air craft for use by the military. Apart from a small number of large vessels built chiefly for experimental purposes and later for passenger trips, the Royal Navy concentrated primarily on fairly small, non-rigid airships, affectionately known by their crews as 'Battlebags' and by the public as 'Blimps'.

RNAS Polegate in East Sussex was one of the first stations for non-rigid airships in Britain and in 1915 it was the location of the first operational flight of the new 'Submarine Scout' or 'SS' type vessel⁹² – a revolutionary aircraft designed to fill a gap in the defence of the Channel coastline and allied shipping. It essentially consisted of an existing aircraft fuselage stripped of its wings and attached to a gas balloon. The success of this craft in its duty of spotting enemy submarines led to the development of the purpose built 'Submarine Scout Zero' or 'SSZ' airship a year later. To improve the operational abilities of these craft from Polegate, two mooring-out posts were created to act as satellite sites for the main station, one at Upton in Dorset and the second at Slindon, which opened in April 1918⁹³ in the woods near Northwood Cottages⁹⁴.



Unidentified SSZ airship from Slindon on a patrol flight over Bognor Regis circa 1918. This photograph was taken by Ethel Jenkins from the garden of No6 Longford Road. Courtesy of West Sussex Past reference number PP/WSL/PC001512

The SSZ airships, much smaller than the Zeppelin giants, measured 143.5 feet long, 46 feet high and an envelope diameter of 30 feet. The envelope



SSZ 43 being brought in to land in one of the mooring bays at Slindon circa 1918. Courtesy of Rodney Gunner

www.slindonatwarmyblog.wordpress.com

had a 70,000 cubic feet capacity (just a fraction of the two million cubic feet capacity of the late-war Zeppelins), but this nonetheless enabled its single 75 horsepower (hp) Rolls Royce engine to provide a top speed of 53 miles per hour (mph) and a total lift of 2.2 tons – enough to carry 120 gallons of fuel, 26 gallons of water ballast, a crew of three (pilot, engineer and wireless operator) in full flying clothing, bombs and enough stores and tools to endure a 17 hour long flight at full speed⁹⁵! Standard armament consisted of a single Lewis Machine-gun and two 57-pound anti-submarine bombs⁹⁶, although Ian Castle in his book 'British Airships 1905 – 30' states the airships carried two 65-pound bombs at first, but later carried four 65-pounders or two 112-pound bombs attached to the

sides of the control car. He also says that sometimes, the SSZs carried a single 230-pound bomb⁹⁷. Different still is Patrick Abbott who states that the usual layout were two 100-pound or one 250-pound bombs⁹⁸.

The station at Slindon, initially under the command of Captain E L D Bartley⁹⁹ and later Lieutenant C J W Hatcher, covered some two hundred acres with a full compliment of 14 Officers, one Warrant Officer and 200 Naval Ratings (it took 100 men just to handle a single airship making a



A Sea Scout Zero crew at Slindon.
 Courtesy of Rodney Gunner

www.slindonatwarmyblog.wordpress.com

landing¹⁰⁰!). The woods of the Slindon Estate provided a screened area in which to moor up to three SSZ airships in L-shaped bays (each bay had a pit in which to contain the airship car, so that the base of the envelope was flush with the ground and with one arm of the 'L' being a ramp to allow access from ground level to the car and vice versa) as well as the timber for the construction of the temporary camp for the men. The 'huts' were not of the best quality, with the roofs being made of surplus airship envelope fabric and probably were not the most comfortable place to live and sleep in the few hours off-duty. The nearby Folly housed the



The Folly on the Slindon Estate was used as a wireless station for the Airship base. Crews on patrol could contact the base through Morse Code messages. Courtesy of Rodney Gunner

www.slindonatwarmyblog.wordpress.com

stations wireless post, where signals from the airships on patrol over the Channel would be received. The life of the airship crews was extremely busy. In the Portsmouth Command area, which included Slindon, over 10,000 hours were spent on patrols in May 1918 alone¹⁰¹! There were three standard patrol routes off the West Sussex coastline flown by the SSZ airships. One was a sweeping arc, reaching out to approximately 18 miles from the shore between the airship base at Polegate and the Mooring-Out post at Slindon. From here, a second route was flown a few miles from the southern coast westwards and then hugged the north coast of the Isle of Wight and onto Slindon's sister Post at Upton, Dorset. The third patrol route was an extension of the first route from Polegate, but rather than sweeping northwards to Slindon, the airships continued in their westerly course, flying a few miles south of the Isle of Wight before heading to the Upton Post¹⁰².

Aside from providing an invaluable service to the merchant shipping in the Channel, Slindon's claim to fame came in the record breaking patrol flight of Lieutenant E J Protheroe, Air Mechanic J R Innell and Wireless Mechanic H Bailey in SSZ.28 on 11-13 August 1918, which lasted for 26 and half hours¹⁰³! Along with its sister site at Upton, these two mooring out

stations were the most successful in Britain. However, a little known fact is that at the beginning of the War, Slindon might never have become the home to airships in West Sussex. In 1914, an unknown entity attempted to purchase land reported to be around 60 acres between Goring and Worthing to establish an airship station¹⁰⁴. As list of SSZ airships posted to RNAS Polegate and its Mooring-Out Posts has been added as Appendix Five at the end of this Case Study.

Zeppelin Raids

When War broke out in August 1914, very few people in Britain really believed that Germany possessed an aircraft that could both cross the Channel and be capable of carrying a payload that could be used to act with any hostility. With the exception of one or two minor nuisance incursions by small seaplanes on shipping and ports on the Kentish Channel coastline, the British public had no real reason to fear, or even expect, the War to be brought to their own country. Further still, West Sussex was considered to be a safe zone with very little risk of ever seeing an enemy aircraft let alone be on the receiving end of one. The nation's attitude changed when on the night of 19 January 1915 two Zeppelins bombed the North Sea coastal towns of Great Yarmouth and King's Lynn. Further attacks came in the ensuing months, but West Sussex remained far removed from the action, for all the raids came from the North Sea direction. In fact, on 8 July 1915, the following advertisement for a house in an undisclosed location in the county appeared in the West Sussex Gazette:

"AUGUST.–LET, unique COUNTRY HOUSE. Four bed, two sitting (lounge hall), bath room (hot and cold), indoor w.c. Large well-stocked garden, stabling for two, tennis lawn, paddock. Use of donkey and cart. Four guineas. Far from Zeppelin raids. Perfect country. – Write Box 184, West Sussex Gazette Office, Arundel¹⁰⁵."

The first sighting of a Zeppelin from West Sussex was to occur on 24 September 1916 when the burning wreckage of L32 falling to the ground over Essex was reported by several people in the Crawley area – some 50 miles away! This was clearly a distressing time and the Crawley Fire Brigade was kept in readiness throughout the night and the following night as a precaution¹⁰⁶. A month later and two near misses were made during a five-Zeppelin raid over England. Zeppelins L13 and L14, piloted by Kapitänleutnant Heinrich Mathy and Kapitänleutnant Aloys Böcker respectively, strayed much further south-west than the other three Commanders. L13 flew over Willinghurst Hill, near Shamley Green in Surrey (just four to five miles north of the current county boundary) whilst L11, after having taken a leisurely tour of the Kent coastline, turned north to Tunbridge Wells and then north west to Oxted, being no further than 11 or 12 miles from West Sussex¹⁰⁷. However, little under a year later, on 25 September 1916, Kapitänleutnant Mathy succeeded in becoming the very first enemy aviator to invade West Sussex airspace en-route to Portsmouth!

Before progressing to investigate this particular event any further, it would be prudent to explore first why the Zeppelin was such a potent, yet

fragile, weapon of War, and a brief biography of Heinrich Mathy. Despite their sheer size, Zeppelins were extremely delicate and their operation was very much weather dependant. Equipment on board was extremely basic to say the least, and although the massive envelope of hydrogen gas (for the 'Super Zeppelin' L31 – the vehicle commanded by Mathy on his flight over Sussex – contained just under two million cubic feet of gas contained in 19 vast gas bags) provided immense lifting power, the weight of the steel frame, engines (six large 240hp Maybach HSLu engines for L31), armament (up to 10 machine guns located on top of the airship [three], control car [two], after-engine car [two], side gondolas [one in each] and near the tail [one]), crew in cold-weather clothing (up to 23) and a bomb load of up to five tons meant that almost the entire lifting capacity was spent just with the weight of the vessel alone¹⁰⁸. Whilst brave commanders could risk piloting a Zeppelin through a storm, the accumulation of snow and rain could be enough to send an airship plummeting to the ground, let alone the threat of a lightning strike. The fragile nature of these sturdy-looking giants is summed up excellently below:

“Navigation is crude – a small liquid compass, liable to freeze at high altitudes; an altimeter, a thermometer, an airspeed meter, are the only instruments. The commander who knows where he is over England at night is lucky...L 31 today [23 September 1916] has a useful load of just under 27 tons. Twenty men, figured at 176 pounds each in leather fur-lined flight clothes. One thousand, seven hundred and fifty gallons of petrol, enough to last for 21 hours...A hundred and fifty-nine gallons of lubricating oil for the engines...more than 10 tons of water ballast in rubberized cloth sacks. Machine guns and ammunition amount to just under 1,000 pounds...Amidships, in the bomb rooms, is carried the “pay load” – four fat, pear shaped 660 pounders, forty more explosive bombs weighing 128 pounds, and sixty incendiaries – “fire-buckets” – 25 pounds each of thermite wrapped in tarred rope. But the leviathan herself is merely a giant bomb. The hydrogen burns on the slightest provocation, and when mixed with air, has the blasting force of dynamite. The petrol, liquid or vapour, is dangerously inflammable. Even though the men wear special shoes to avoid striking sparks, and give up matches before going on board, accidents are always happening¹⁰⁹”

Kapitänleutnant Horst Julius Freiherr Treusch von Buttlar-Brandenfels was another Zeppelin commander who piloted several raids alongside Kapitänleutnant Mathy, and the translated edition of his book 'Zeppelins Over England' paints a similar picture of the frailty of the Zeppelin and the fine balance required to save weight for raids:

“At the beginning of 1916 all airships were equipped with parachutes, so that, in the case of extremity – that is to say, when the ship was on fire – the crew might save themselves by jumping overboard. But these parachutes constituted a considerable weight, besides which it was questionable whether it would ever be possible to jump out of the ship in time. From the cars it would not have

been so very difficult, but it was not such an easy matter for the men who happened to be on the catwalk at the time. On all our raids we reduced our weight on board to the barest minimum. Indeed, we carried this principle so far that we even took the minimum supply of maps and charts – only one pair of compasses, for instance...and I found it very necessary to go over the ship from time to time in order to get rid of spare parts and other articles, including tools, which used to accumulate in the ship unless a periodical clearance was made. By this means we were always able to lighten the ship by a few pounds, and often by as much as a hundredweight. For the same reason I always refused to carry parachutes with me on board. Their weight reduced the lift of the ship, and their value was problematical...and most of the other commanders of airships acted as I did¹¹⁰."

Despite all this, the Zeppelin was a formidable opponent and was extremely difficult to take any countermeasures against. They could fly much higher than even the most advanced British aircraft, could out manoeuvre and were far more agile than anything the British could throw at them, were often faster (usually assisted by a tailwind) than most Home Defence aeroplanes and could glide above the range of the Anti-Aircraft guns. Their vulnerability came in an attack, where they would have to descend to around 4000 feet in order to release their bombs accurately. Furthermore, pure hydrogen gas is not flammable, contrary to popular belief, but only becomes so when it has achieved a certain degree of mix with oxygen. The construction of the Zeppelin also made it a difficult adversary to bring down, even if direct hits were scored. The gas was contained in a number of cells inside the airship envelope which meant that even if several of the cells were punctured, not all the gas would be able to escape. Conventional machine gun ammunition would do little more than pepper the envelope with tiny holes, leaving the airships largely unscathed and with only a tiny fraction of gas leakage. Seeing that Zeppelins could not simply be shot down, one thought was to drop a number of small steel darts, known as Flechettes, on top of the airship, but the biggest problem was that it was extremely difficult for a small aeroplane to get into a position above a Zeppelin in order to drop the objects. On the few occasions that they were utilised, the Flechettes were proven to not be any more effective than machine gun bullets. Another slight development of the Flechette was the Ranken Explosive Dart which worked in the same way, but was intended to explode upon entering an airships envelope. In effect, there was no real defence against the Zeppelins who were free to roam over England for much of their early raids. The British then developed phosphorous incendiary bullets that, once exited from the gun muzzle ignited in contact with the air and were thought to be able to bring down the giants. However, without the correct hydrogen-oxygen mixture, the flaming bullets did little other than pass straight through the airship as normal bullets did. The solution to the Zeppelin problem had still not been discovered. It was not until well over one and a half years since the first Zeppelin attack on 19 January 1915 that an enemy airship was brought down over England. The date was 3 September 1916 and SL-11 (a Shütte-Lanz airship, so not technically a Zeppelin) was spotted by William Leeffe Robinson, who had equipped his

machine-guns with alternate standard and phosphorous rounds. He had achieved the difficult position of being above the vessel and as he dived, he emptied an entire drum of his ammunition along the length of the envelope to no effect. Having re-loaded, he then emptied his second drum along the side of the envelope, again to no effect. With his third and final drum, he decided to close in to a distance of five hundred feet and to concentrate his efforts on a single point on the airship. Just as he emptied the drum he noticed a red glow from inside the gas cell he had just fired at, which soon erupted into a fireball that spread throughout the vehicle. His mix of ammunition type and concentrating on one spot had meant that the correct mix of hydrogen and oxygen had accumulated and so allowed one of the final incendiary rounds to ignite the gas. This action over what had previously been an enemy immune to attack earned Leefe Robinson the Victoria Cross¹¹¹.

Contrary to the British opinion of airships, Heinrich Ferdinand Friedrich Mathy, an unusually young Kapitänleutnant (born 4th April 1883 at Mannheim¹¹²) on a German Navy destroyer who had excelled during his time as a Naval Cadet, saw the potential of airships as having an important role in military hostilities as early as 1907¹¹³. It was whilst training for a Naval Commission in 1913 to 1914 that he first gained experience of Count von Zeppelins creations¹¹⁴, and it was during this time that he most likely came to the notice of the Führer der Luftschiffe (Leader of Airships), Fregattenkapitän Peter Strasser, who personally oversaw the transfer of Mathy from the destroyers to a Kapitänleutnant of the Naval Airship fleet on 10 January 1915 after a period of acting as Strasser's personal administrative assistant, and even assigned him the command of the as yet unbuilt L9¹¹⁵.

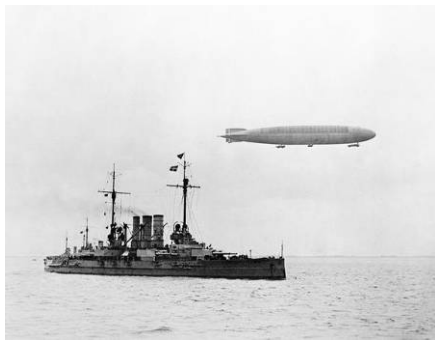


Kapitänleutnant
 Heinrich Mathy.
 Courtesy of
 Imperial War
 Museum reference
 number Q 58566

Heinrich Mathy was without doubt the most daring and successful airship commander of the War, often found to take risks and sacrificing speed, height and performance in order to carry much larger bomb loads than his contemporaries. He undertook some 23 operational and attempted raids against England in four different airships between January 1915 and the night of the raid upon Portsmouth – his first being on the night of 13-14 January 1915, just three days after his transfer to the Deutsche Marine-Luftschiff-Abteilung (German Naval Airship Division) in Zeppelin L5 which he 'borrowed' from his superior, Peter Strasser, following the latter was unable to lead the raid that night. During his career, he accumulated several records including being the first to carry and drop the enormous 300 kilogram (kg) bomb on England, causing the most damage by a single aircraft in a single raid, causing the most casualties by a single aircraft in a single raid, being the first Naval airship commander to reach London, making the first cross-capital bombing raid and making the first and only recorded raid on a southern English naval base during the First World War. On one particular raid, the night of 8-9 September 1915 in L13, Mathy caused £534,287 of damage (over £23million in today's values¹¹⁶, which alone accounted for over a sixth of the total air

raid damage in England for the whole of the First World War¹¹⁷! A summary of all of Kapitänleutnant Mathy's recorded raids are included as Appendix Six at the end of this Case Study.

Having now attained some degree of understanding into the character and daring of Heinrich Mathy, we can now understand what drove him to undertake the surprise audacious attack on Portsmouth on the night of 25 September 1916. The day began with seven Navy Zeppelins lifting off from their bases in northern Germany at midday¹¹⁸. The force was split into two groups. The first group, comprising five Zeppelins were ordered to attack the Midlands, but the two newest 'Super Zeppelins' – L30 commanded by Kapitänleutnant von Buttlar and L31 commanded by Kapitänleutnant Mathy – were tasked with another bombing raid over London, this mission now only being possible with the greater speed and altitude that these latest colossal airships, each one measuring nearly 650 feet long and 91 feet high, could achieve. The air defences around London were by now more than a match for the older Zeppelins, and the British were now using phosphorous ammunition designed specifically to take down the invading aircraft.



L31 flying over the German battleship 'Ostfriesland'. Courtesy of Imperial War Museum reference number Q 58459

Upon taking off at the airship base at Ahlhorn, they climbed to a height of approximately 5000 feet and set the engines to a cruising speed of around 50mph¹¹⁹. Their route took them on a southerly route around the Netherlands, using the cities of Osnabrück, Dortmund, Wupperthal and Cologne as waypoints to navigate to the town of Aachen, on the border of Germany, Belgium and neutral Netherlands¹²⁰. From here, they again used the big cities of occupied Belgium to navigate by, taking a course via Liège, Louvain, Mechelen and Ghent before lining

up to break the coast between Ostend and Blankenberghe at 8.20pm. They hovered over the coast until the sky darkens before they set off in a westerly direction down the Channel. Whilst still over the Channel, von Buttlar abandons a raid on London and turns back, but Mathy continued and eventually reached the Kent coast at Dungeness at 9.35pm. The sky was completely clear all the way to London, meaning that an attack on London was impossible for without cloud or fog to use as cover, the slow moving Zeppelins would be sitting ducks for the Anti-Aircraft gunners on the ground and the patrolling fighter planes over the London Defence Zone¹²¹. Mathy's orders from Strasser himself were clear – no attempt on the capital should be made unless there is favourable cloud cover. The toll of recent losses of the Naval Airship Division meant that zealous risks were not a luxury the Germans could afford¹²². After waiting a while over Dungeness, Mathy decided to try his luck on Portsmouth, reportedly having said to his crew "nobody has ever been, and it is sure to be very interesting¹²³!" He proceeded to take a westerly course along the coastline, breaking land again momentarily as he flew over Beachy Head at 10.15pm and then following the coastline of Sussex a few miles off

shore. Just after 11.00pm he was over Selsey, where he again brought his ship to a still, descended to 4000 feet and dropped a parachute flare to ascertain his position. Whether he intended to confuse the British as to his intentions, or whether he just wanted take a route with waypoints that would take him directly into Portsmouth Harbour is unknown, but he now ordered the Zeppelin to turn south-west, rise to 11,000 feet and headed towards the Isle of Wight, reaching Sandown before turning north again to fly directly over Ryde and then into Portsmouth Harbour itself at 11.50pm¹²⁴.

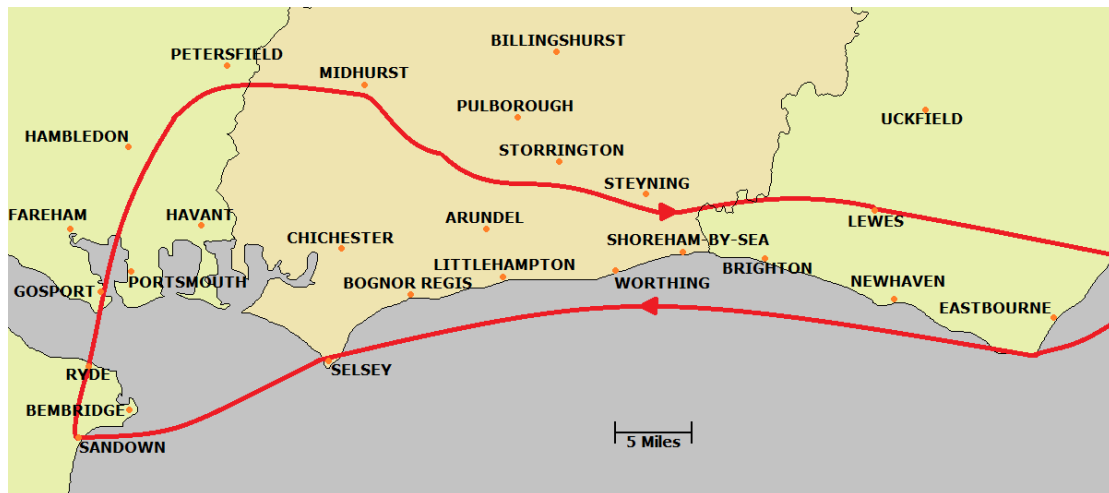
By this point, the Zeppelin had been sighted several times along the Kent and Sussex coast and Flight Lieutenant H A Buss in his BE2c from the RNAS base at Manston, Lieutenant W H Dolphin, Major M G Christie and Second Lieutenant W A McClaughry also in BE2c fighters of No50 Squadron RFC at their base at Dover, and Lieutenant H H M Fraser in another BE2c of No50 Squadron at the RFC base Bekebourne had all been scrambled to intercept, but none of the planes could locate the airship¹²⁵. At 11.00pm, a soldier of the 2/9 Hampshire Regiment on coastal patrol duties at Pagham Harbour spotted Mathy's craft and notified his Commanding Officer who sent the report directly to the War Room¹²⁶. The alert was sent immediately to the Portsmouth Defences where the air raid siren was sounded, the Dockyard power generator turned off to plunge the city into a blackout and the men rushed to man the guns and searchlights, with the same orders also being sent out to the Royal Navy ships and Forts in the Solent¹²⁷. Two more aircraft, this time from RNAS Calshot, were also sent aloft to hunt for the intruder, namely Flight Lieutenant E J Cooper in his Short 827 and Flight Commander A W Bigsworth in a White & Thompson No3 seaplane¹²⁸.



A BE2c similar to those flown in defense against the L31. Courtesy of Imperial War Museum reference number Q 57619



Flight path of L31 on the night of 25-26 September 1916



An enlargement of the inset depicted in the previous map showing the approximate route of the L31 over West Sussex based upon descriptive evidence

Mathy, on approach to the Dockyards, descended to around 4000 feet once again and was picked up almost immediately by the searchlights and the Anti-Aircraft gunners all trained their sights on the brightly illuminated "long black cigar shape in the sky"¹²⁹. Mathy ordered the Zeppelin to proceed at full speed towards the Docks and to commence the bombing in order to lighten the load. The first bomb was a near miss, landing in the water between the newly commissioned HMS Renown, which was directly below the airship, and HMS Vernon III (now HMS Warrior on display at the Historic Dockyards). Aboard the Zeppelin was Pitt Klein who survived the War and wrote a book of his experiences. When discussing the Portsmouth Raid, he claimed that the Zeppelin was actually over the forts when the first bombs were released and direct hits were scored on the gun battery, silencing them and destroying the searchlights. This was not true at all, the searchlights all remained functioning and no bombs hit anything other than open water. Klein, however, does paint a vivid picture of the tension in the control car. Mathy ordered the ship to climb higher, all six engines were at full power and the horizontal rudder altered to take the Zeppelin into a nose-first climb – or so it was hoped. Instead, the sheer weight of the airship meant that it simply pivoted into a sloping angle, but it just continued to hover in the same position. Klein was in the rear engine car and Mathy continued to demand more power, but due to the airships posture, fuel was spilling out of the engines and edging closer to the red-hot exhausts. Klein had no choice but to disobey his orders. If the fuel vapours had hit the exhausts then the whole vessel would have exploded, so he was forced to shut off the rear engines. This caused the Zeppelin to suddenly pitch and the ground gunners had thought they had hit it. Mathy changed his plan and ordered all engines to full power and took the Zeppelin in a flat loop in order to be in a position to release the rest of the bombs – some 3550kg! Once again, Pitt Klein recounts hearing deafening explosions and seeing the Dockyard and city on fire¹³⁰. However, once again all bombs in actual fact fell in open water in the Harbour and no one on the ground reported seeing any explosions, indicating that, in a twist of good luck for the ships in the harbour, none of the bombs had even been fused¹³¹. With all the bombs gone, Mathy took a northerly course, flying several miles inland to escape the continuous gunfire from Portsmouth. Once a place of safety had been reached, he is reported to have said to

his crew "Children, we will not go anywhere near Portsmouth again if we can help it. Give us London any day"^{132!} The bombing attack had lasted two tense minutes. The Zeppelin then took an easterly route, skirting the south of Midhurst before turning south-east to follow the line of the South Downs, over Lewes and Hailsham, finally crossing the coast at St Leonard's at 1.15am on the morning of 26 September and departing back to Ostend from Dover at 2.30am, to follow the same route (in reverse) back to Ahlhorn he had taken over six hours previously. Whilst flying east through Sussex, Lieutenant W H Dolphin and Major M G Christie flew another patrol at 10,000 feet from their base at Dover in order to attempt to catch the Zeppelin on its return journey. Despite the nine defence sorties flown to try and intercept L31, only two pilots caught sight the vessel. Flight Commander A W Bigsworth had spotted L31 in the searchlights over Portsmouth, but suffered engine trouble shortly afterwards, forcing him to set down on the water at RNAS Calshot,



A Short 827 seaplane similar to the one flown by Flight Lieutenant E J Cooper. Courtesy of Imperial War Museum reference number HU 66647



An example of a White & Thompson No3 Flying Boat. Courtesy of Imperial War Museum reference number Q 68177

White & Thompson Limited, later Norman Thompson Flight Company Limited, factory at Middleton-on-Sea¹³⁶.

damaging his plane in the process, whilst Flight Lieutenant E J Cooper caught sight as L31 was heading north away from Portsmouth but his seaplane also lacked the speed and height necessary to give chase or pose a threat¹³³.

Nonetheless, within a matter of days of the raid, a new RFC base was established at Hove to prevent another Channel raid and another squadron of aircraft was formed at RNAS Fort Grange to specifically defend Portsmouth¹³⁴. As it happens, this affair holds deeper ties to West Sussex than it at first appears, for Flight Commander Bigsworth's aircraft, serial number 3807¹³⁵, was the seventh such White & Thompson No3 that was built at the

Remarkably, the British, knowing that it was Mathy (who even before the Portsmouth attack had become a household name across much of Britain) who was in command of the Zeppelin could not comprehend the reason as to why not one bomb had hit the Dockyard, and supposed that he was merely on a reconnaissance flight or that the bomb release gear had suffered an electrical fault, dismissing the truth of being blinded by searchlights and bombarded by incendiary shells as “most improbable”¹³⁷. This belief in Mathy’s aptitude pervaded well beyond the attack, and even after the War itself, for in 1932, some sixteen years later, an unnamed German airship took another flight over Portsmouth, the city’s defences and harbour and then onto London prompting, on 7 July 1932, a debate in the House of Commons at which Sir Bertram Falle, 1st Baron Portsea, asked the then Under-Secretary of State for Air, Sir Philip Sassoon if he was “aware that it is over 17 years [*sic*] since a German Zeppelin flew over Portsmouth, that the commandant of that airship lost his way and was not able to pick out where he was”¹³⁸. The unease of the threat German airships posed to Portsmouth, even in peacetime, was proven later still on 5 July 1936 when the infamous airship ‘Hindenburg’ made a similar flight, prompting another House of Commons debate just three days later at which Captain Sir Peter McDonald, Member of Parliament (MP) for the Isle of Wight, asked “whether there are any regulations to prevent such flying; and what steps are taken to enforce them”¹³⁹?”



A W Bigsworth.
 Courtesy of Imperial War Museum
 reference number Q 69479

Interestingly, in her article on this episode in the history of Portsmouth and Selsey, Lisa Hammond makes reference to there being two Zeppelins taking part in the raid, the other being von Buttlar’s L30, and indeed the report from the 2/9 Hampshire Regiment clearly stated “two Airships going towards Portsmouth”¹⁴⁰. All other sources consulted, however, only make reference to one. Indeed, John Sadden in his book ‘Portsmouth: In Defence of the Realm’ makes a clear and particular reference to “a solitary attack on Portsmouth by Zeppelin L31”¹⁴¹. Furthermore, at no point in his personal memoirs does Kapitänleutnant von Buttlar, the commander of L30, make any reference to being involved in an attack on Portsmouth¹⁴². This definitive sighting of two aircraft by the 2/9 Hampshire Regiment is just one of the mysteries encountered during the research for this Case Study. Indeed, this sighting appears to be the only reference in British or German records of L31 having an accomplice that seemingly vanished after being sighted off Selsey.

Contrary to the long held belief of almost all Sussex residents, “the flight of the L31 on 25 September 1916 intimated the vulnerability of civilian inhabitants of towns and villages alike”¹⁴³. I say ‘almost all Sussex residents’ with purposeful intent, because the forward-thinking Edward Heron-Allen in his journal entry for 29 September 1914 – a little over a month since the War began – wrote “We begin to hear of Zeppelins – they raided Ostend on the 24th...Of course we laugh at them – we laugh at

everything. We are assured that they cannot come to England, but I really do not see why not¹⁴⁴!" and again for 23 March 1916 stated "Seeing that they [Zeppelins] have reached Derby and got home again safely I see no reason why they should not get to Portsmouth¹⁴⁵." Heron-Allen also has a detailed narration on the Raid of 25-26 September:

"Last night at 11.30pm a zeppelin passed over Selsey on its way to Portsmouth, where it dropped several bombs, and then turned off unmolested and disappeared to the north and was not heard of again. When I bought 'Large Acres' [at Selsey] and built my house I used to say, with that fatuous and idiotic sense of humour with which we have always regarded 'the German menace', that I had chosen the one spot in England which would be most exposed to German attack, seeing that we command the Solent and the approaches to Southampton and Portsmouth. People used to laugh with me and at me – especially our German governess. I have had good reason to remember this grim jocularly since August 1914, and never more so than last night. I travelled up [to London] with two naval officers and a civilian from Portsmouth this morning, and was interested to note that the former denied any knowledge of the raid, - later, one acknowledged that there had been an airship over Portsmouth but that (a) it had dropped no bombs, and (b) it was 'probably' one of our own aircraft. The civilian however was more communicative, for he had seen the bombs fall and was not afraid to say so, though the naval men tried to scowl him down. I heard in London, on arrival, that a bomb had fallen between two of our big battleships in the harbour. We have been told by quite trustworthy witnesses that a regular system of light signals has been observed on the landward side, from a house close to the shore at Selsey, but the local police and coast guards pooh-pooh the whole affair, and simply refuse to take any action in the matter. I hope that after last night's experience the matter will be taken out of their hands by a higher authority and that something will be done to rid Selsey of its spies. Any local report is calmly laughed at, and one wonders 'how it is done'¹⁴⁶."

An article from the Chichester Observer detailing this alleged spy case can be found in Appendix Seven at the end of this Case Study.

As we explored earlier in this Case Study, the suspicion of spies around every corner was ever present. Heron-Allen recounts later in his journal how the Zeppelin was said to have hovered directly over the house emitting 'light signals' and it was his belief that the L31's commander was ordered before he set off from Germany to receive signals from this certain house at Selsey before continuing onto Portsmouth. Of course, we now know that Mathy's westward journey was an off-the-cuff decision, the spontaneity of which was the very definition of who Mathy was as a wartime commander, but the conviction engrained in the British psyche that anyone acting differently was in some way a spy eventually led to a forced case in the Magistrates Court on 14 October 1916 at which four ladies from Selsey brought charges against the occupant of the house in question (said to have been a London Bank Manager on holiday). The case

fell through when the Magistrates refused to believe the ladies and the nameless man was fined ten shillings (£21.53 in today's values¹⁴⁷) for shining too bright a light¹⁴⁸. As can be expected, the raid on Portsmouth also warranted an article in the Chichester Observer on 27 September giving only vague details in line with Government censorship. The full article has been included in Appendix Seven at the end of this Case Study, along with some articles from other newspapers to provide a fascinating insight into how this affair was broadcast by British and German authorities. Nonetheless, an interesting advertisement appears at the very end of the Chichester Observer article, as follows:

"ZEPPELIN RAID – Whitehead & Whitehead effect Insurances direct with the Government; also with Lloyd's and all the principal Insurance Companies. – Apply for particulars to Station Road, Bognor. Telephone 180¹⁴⁹."

Now that the people of West Sussex had been awoken to the Zeppelin threat, it would appear that one local company at least were keen to take advantage of the extra customers that could be gained in this new wave of worry and distress!



"The Fourth! Super-Zeppelin brought down in Flames at Potters Bar, Oct 1st, 1916" A graphic postcard depicting the L31 following the attack by Second Lieutenant W J Tempest. Image courtesy of West Sussex Record Office reference number MP 1109

A few days of rest and Mathy was once again over England on the night of 1-2 October. Heading for London, he once again used the North Sea route to approach the capital from the east coast, breaking land at Lowestoft. He progressed on a perfect south-westerly course, nearing the outskirts of London approximately 10 miles from Chelmsford when he was caught in a mass of searchlights at 9.45pm. Attempting to get out of the searchlight beams, he suddenly turned sharply north-west, but this would prove to be a mistake that sealed his fate. The Home Defence Squadron at North Weald Basset Aerodrome had by this point only just been scrambled and if Mathy had continued unperturbed on his original route, he would have been on a bombing run over London well in advance of the RFC fighters having climbed to the correct altitude¹⁵⁰.

However, now over Cheshunt, one of Mathy's crew must have spotted a threat and most of the bomb load was jettisoned over the town, injuring one woman in the process, in order to lighten the weight of the Zeppelin and allow it to climb. It was at this point that Second Lieutenant Wulstan J Tempest of No39 Squadron RFC, over south-west London, spotted the helpless L31 in a mass of searchlight beams in the distance. He had the scarce advantage of being some 3500 feet higher than L31 and so could not miss the opportunity to take action – the Zeppelin was climbing fast now it had lightened its load. At full speed, he shot across the capital, manually working the petrol tank pressure pump after having overworked the mechanical pump before diving down on the Zeppelin, firing his machine-gun. As he passed underneath the airship, he again gave another burst of the now pattern mix of alternate standard and phosphorous rounds and then found a spot under the tail where he was able to concentrate the remainder of his drum onto a single point. L31 suddenly began to glow red inside and then an immense flame shot out the front as it plummeted to the ground. Tempest himself was almost caught in the flaming wreck which was falling faster than his plane could dive, only narrowly escaping a similar fate as the German crew by putting his own aeroplane into a nearly uncontrollable spin to corkscrew out the way¹⁵¹. After the War, Oberleutnant zur See und früherer Wachoffizier (Naval First Lieutenant and former Officer of the Watch) Hans Gebauer wrote an account of his experiences as a Zeppelin crewmember aboard L16 on the night of 1-2 October 1916, in which he gives a graphic account from the German perspective of the loss of L31:

"One of our airships was hit and lit us up like a massive deadly torch, it plunged into the deep wrapped in flames; it was so close to us that we started to believe it was our own ship that was burning. In the next sorties, when our targets were other cities, it was the same as over London. Each time one of our proud ships went up in flames. In the Midlands on our last attack we saw the glow of the flaming and falling L31, in which Mathy who came from Ahlhorn was killed¹⁵²."

Wanting to avoid a fiery death, Mathy reportedly wrapped a thick scarf around his neck that had been given to him as a present from his wife and jumped out of the control car¹⁵³. The impact with the ground at Potters Bar was such that he embedded himself several inches into the soft ground, though he survived long enough for local residents to investigate



W J Tempest.
Courtesy of Imperial
War Museum
reference number Q
57048



The wreckage of L31 after being shot down over Potters Bar. The tree became known as the 'Zeppelin Oak' until it was removed to make way for housing. A replica of the tree now stands in Wulstan Drive near the crash site as a memorial. Courtesy of Imperial War Museum reference number Q 55554

before succumbing to his injuries¹⁵⁴. An inquest the next day stated "that death was due to injuries received whilst travelling in hostile airship¹⁵⁵." Much of the aluminium from the wreckage was salvaged for use in Britain's own war effort, as well as pieces finding their way into the hands of locals when the guards were not looking – the altar-cross at St. Mary the Virgin and All Saints Church at Potters Bar today is made from metal taken from the wreckage¹⁵⁶. All nineteen members of the crew, most, if not all, of whom were onboard during the flight of L31 over West Sussex a few days previously, were also killed in the

crash. They were:

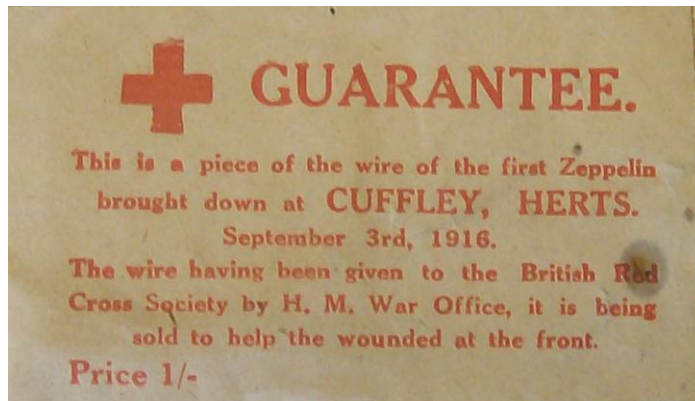
Maschinenmaat¹⁵⁷ (Mechanic's Mate) Eugen Boudange¹⁵⁸; aged 24¹⁵⁹
 Bootsmaat¹⁶⁰ (Boatswain's Mate) Arthur Hermann Fritz Budwitz¹⁶¹; 27¹⁶²
 Obermatrose¹⁶³ (Petty Officer) Karl Johann Dornbusch¹⁶⁴; 26¹⁶⁵
 Maschinenmaat¹⁶⁶ (Mechanic's Mate) Nikolaus Willibold Hemmerling¹⁶⁷; 30¹⁶⁸
 Obermaschinist¹⁶⁹ (Chief Mechanic) Karl Jean Bernhard Hiort¹⁷⁰; 23¹⁷¹
 Segelmachersmaat¹⁷² (Sail maker's Mate) Ernst Willy Paul Kaiser¹⁷³; 24¹⁷⁴
 Telegraphist¹⁷⁵ (Telegraph Operator) Ernst Stephan Klee¹⁷⁶; 26¹⁷⁷
 Steuermann¹⁷⁸ (Helmsman) Siegfried Johannes Herbert Körber¹⁷⁹; 31¹⁸⁰
 Signalmaat¹⁸¹ (Telegraphist's Mate) Gustav Karl Wilhelm Kunisch¹⁸²; 24¹⁸³
 Kapitänleutnant¹⁸⁴ (Lieutenant Commander) Heinrich Ferdinand Friedrich Mathy¹⁸⁵; 33¹⁸⁶
 Maschinenmaat¹⁸⁷ (Mechanic's Mate) Karl Friedrich Wilhelm Mensing¹⁸⁸; 32¹⁸⁹
 Obersteuermannsmaat¹⁹⁰ (Chief Helmsman's Mate) Friedrich Johann Peters¹⁹¹; 27¹⁹²
 Obermatrose¹⁹³ (Petty Officer) Heinrich Phillipp¹⁹⁴; 27¹⁹⁵
 Maschinenmaat¹⁹⁶ (Mechanic's Mate) Friedrich Karl Christian Rohr¹⁹⁷; 27¹⁹⁸
 Maschinenmaat¹⁹⁹ (Mechanic's Mate) Hubert Karl Ernst Armin Stender²⁰⁰; 23²⁰¹
 Maschinist²⁰² (Engineer) Joseph Friedrich Wegener²⁰³; 37²⁰⁴
 Leutnant zur See²⁰⁵ (Midshipman) Jochen Julius Otto Hubertus Werner²⁰⁶; 21²⁰⁷
 Bootsmaat²⁰⁸ (Boatswain's Mate) Heinrich Witthöft²⁰⁹; 28²¹⁰
 Obermaschinistenmaat²¹¹ (Chief Mechanic's Mate) Viktor Karl Friedrich Wilhelm Woellert²¹²; 34²¹³

It is interesting to note that Captain W H Dolphin of No50 Squadron flew a two hour patrol between Newhaven and Eastbourne in a BE2c in anticipation of another expected attempt on Portsmouth²¹⁴. The downing of L31 over Potters Bar was ironically reportedly observed as far away as

the West Sussex coast as a short note in the Chichester Observer of 4 October explains:

“THE ZEPP! – The descent in flames of the Zepp near Potter’s Bar on Sunday night was witnessed by a few Littlehamptonians. Mr A E Candlin was on duty in the capacity of a member of the Volunteer Battalion, at the Wharf [Littlehampton], and saw the spectacle²¹⁵.”

In another coincidental link with West Sussex, in the 1960s the crew of SL-11 (the first airship shot down over Britain) and L31 were transferred from their respective burial places to the newly opened Cannock Chase German Military Cemetery in Staffordshire, where the two sets of crew were reinterred side by side. How this links to West Sussex is that held in the archives at the West Sussex Record Office is a small envelope containing a piece of cable from the wreckage SL-11 sold as a souvenir by the Red Cross to raise funds during the War²¹⁶.



Red Cross envelope containing a piece of German airship SL-11. Courtesy of West Sussex Record Office reference number MP 1109

Prior to the 25 September 1916 Portsmouth Raid, it was not considered that West Sussex was at any real risk of being attacked from the air or the sea, although the Police and Local Authorities did all produce plans and regulations in the event of an aerial or naval

bombardment after the first attacks on Britain commenced on 19 January 1915. The first evidence of this comes in the form of General Order 4249 issued to Horsham Police Station six days later, on 25 January. It required that:

“On the occasion of an Air Raid by Zeppelin or Aeroplanes, Constables and Special Constables should warn inhabitants to remain indoors and not to come out into the streets. The Chairman of Urban and District Councils should be seen at once and invited to give these instructions due publicity; and also to give such directions as to the extinguishing of all lights. Electric light and Gas should be turned off at the main, but in the case of Gas there would be danger unless everybody was warned to turn off the jets. Other lights must be put out by those in charge of them. It will be the duty of Constables and Special Constables to see that all lights are put out, to advise people to remain indoors, to report and try to extinguish any fire. Firemen should be warned to stand by if information is received of a possible raid²¹⁷.”

The instruction to civilians was little more than keep indoors, turn off the electricity and gas and wait it out! This is not particularly surprising however, since the first ever bombing of mainland Britain had only

occurred less than a week before and no one quite knew how to deal with the matter. In an attempt to figure out a solution, the Police were ordered by the Home Office on 29 January to report any fragments of bombs found so that the military authorities could fathom exactly what they were up against:

"I am directed by the Secretary of State to say that the Lords Commissioners of the Admiralty have asked him to request the Police to forward to the Air Department Admiralty Whitehall all fragments of Bombs which may be obtained by them, after any air raids on this country. The Police should also forward all available information in regard to the place where and time when the bomb was dropped, the damage done and any particulars regarding the aircraft. Unexploded bombs should be reported on by telegram...but on no account should they be handled or moved about unless by an experienced officer of the Air Department. Action in these matters should be taken with all possible expedition, since the earlier the particulars are received by the Admiralty the easier it will be to take advantage of the information furnished²¹⁸."

The angst felt by those who foresaw the Zeppelin threat is best summed up by Edward Heron-Allen in an entry following the 19 January attack on the east coast:

"The really maddening thing is that the French air defences seem to be perfect. The moment a zeppelin starts for Paris, Paris knows of it, its aeroplanes are up in the air waiting, and no airship has been able to reach the city – and it is comparatively next door for the Germans²¹⁹."

Nonetheless, an Aerial Raid Defence Scheme was produced by the Police, though it did little more other than to reiterate the case of 'stay indoors'²²⁰. A full copy of the Defence Scheme can be found as Appendix Eight at the end of this Case Study.

Lighting Restrictions – a kind of First World War blackout – later became the order of the day in an attempt to prevent enemy aircraft from being able to see targets or use the illuminations as navigation aids, because even as late as September 1915, many of the towns and cities in England were still party, or even entirely, lit up and it was precisely this reason that allowed Kapitänleutnant Mathy on the night of 8-9 September 1915 to cause the most damage of any raid in the entire War whilst flying over London – he was able to pick out individual buildings almost as if it were daytime²²¹. By early 1916, the regulations became strictly enforced, reminiscent of the later situation in the Second World War and scenes of the popular sitcom *Dad's Army* – 'Put that light out!'. Once more, Heron-Allen enlightens us to his experience at the hands of the local Police in Selsey in his uniquely caustic yet refined style:

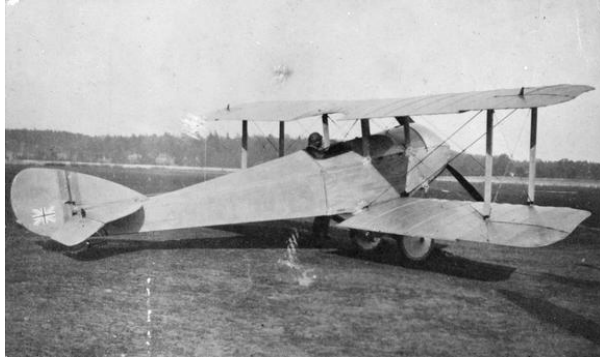
"[31 March 1916] The lighting question has become acute, and Selsey is flooded with comminatory notices on the subject. The local policeman, like an intermittent volcano, has sprung into

renewed activity...Now that dogs are greatly reduced in numbers, and bicyclists no longer try to make head or tail of the conflicting orders which regulate their lights – it is penal to ride without, and penal to ride *with* one after dark – the lighting orders have come as a god-send, and our ‘Sbirro’ [Italian slang for Policeman, or ‘Cop’] prowls around levying half crowns [about £5.38 today²²²] upon anyone whose blowing curtains show a streak of light for one moment. The Great Unpaid – the Justices of the Peace of Chichester – spend hours weekly fining the victims of the vigilance of the rural police, and the present incumbent of our rural police station is a veritable Duke of Otranto [reference to the nineteenth century French Minister of Police] – or ‘Sherlock Holmes’ – in his talent for spotting the criminal candle. I can imagine his ideal dream – giving evidence against the moon, which defies his authority²²³.”

Even Chichester Cathedral was not immune and a brief note in the 30 September 1915 edition of the West Sussex Gazette notified the congregation that the Dean decided to discontinue the evening services on Thursdays “Owing to present restrictions over lighting, and in the common interest²²⁴.”

The fear of bombardment in one form or another was prevalent throughout the coastal areas of West Sussex, and the apprehension even extended inland several miles to places such as Findon²²⁵. In answer to this, the Government set up an insurance scheme that promised to compensate any damage or destruction done to property as the result of bombardment from the air or the sea, including any caused by British or Allied forces²²⁶. Local authorities also took advantage of the Government offer in order to insure publicly owned assets in their custody. Westhampnett’s Guardians of the Poor (archaic nineteenth and early twentieth Century local authorities who administered the Poor Law) covered the old Workhouse in their parish against German bombs²²⁷, and the Shoreham Harbour Trustees also decided to take up the offer by insuring the harbour property against both aerial and sea attack²²⁸. In Chichester on the other hand, this matter of insurance became a controversial topic amongst the elected Municipal Borough Councillors. At a meeting prior to 5 August 1915, it was decided without question to protect the contents of the Children’s Home, but no firm resolution was reached as to the Chichester Workhouse²²⁹. It was not until another meeting a month later that it was proposed to insure the Workhouse, but only against air attack and not from a naval bombardment. The West Sussex Gazette of 5 August informs us that a Councillor Leng thought the building should be insured against both threats, but was informed by Councillor Fowler that to insure against sea attack would be “utter tom-foolery” and with that attitude the Council “might as well insure against bombardment from Jerusalem.” The motion was carried that only cover against an attack from hostile aircraft would be placed upon the Workhouse²³⁰.

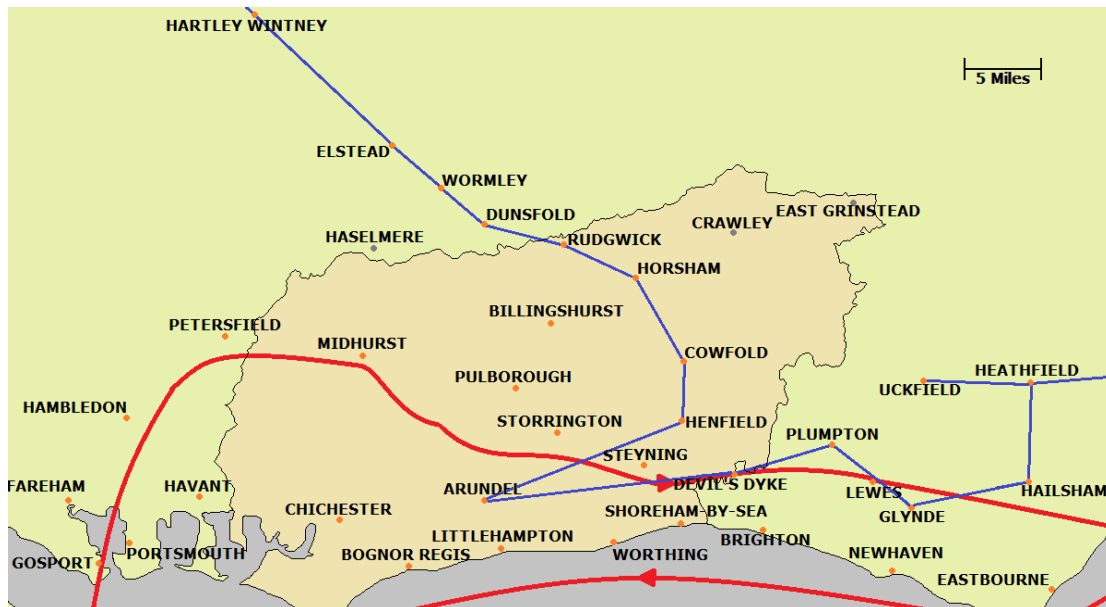
Very little was done to actually defend West Sussex against a possible Zeppelin attack. At the beginning of the War, No3 Reserve Aeroplane Squadron was formed at Shoreham to train pilots and ground crew, whilst the Flying Instructors were to have a second role as pilots for Home Defence duties²³¹ and that from 6 May 1915, Shoreham was to maintain at least one aeroplane for the defence of London. Indeed, Shoreham followed the War Office instructions and a single Martinsyde S1 Scout was



A Martinsyde S1 Scout like that based at Shoreham Airport. Courtesy of Imperial War Museum reference number Q 61431

armed with incendiary bombs for such duties, though the effectiveness of this as a deterrent to a Zeppelin, as we have already explored, would have been questionable, if not negligible²³². A sound mirror was also established at Selsey in 1916 and a map held at The National Archives dated 24 September 1917 (one day shy of the anniversary of the L31 raid in 1916) shows that No7

Company of the Royal Observer Corps had set up an observer cordon along the coastlines of East and West Sussex. However, despite Mathy's exploits of one year previous still ringing in the minds of the population, the cordon only came as far west as Arundel, before it backtracked on itself, to suddenly turn east to Henfield before continuing on a steep north-westerly arc, finally leaving the county at Rudgwick and continuing far inland to Devizes in Wiltshire²³³!



The Royal Observer Corps cordon as at 24 September 1917 (blue line) shown in association with the route of L31 on 25 September 1916 (red line)

Following the L31's escapade over Selsey en-route to Portsmouth, a note in the Selsey Church Service Register of 25 October 1916 informs us that "Evening services were [now] at 6pm for fear of aerial dangers from Zeppelins²³⁴" – an eerily simplistic insight into the mindset of locals and the degree to which the fear of a repeat performance by a squadron of Zeppelins was expected by civilians and officials alike. This notion, as we

have already seen, was carried on long past the end of the First World War, but not just by those in privileged positions. Valerie Martin's excellent archival website on Findon and the surroundings recounts how the events of 5 July 1936 brought recollections of the dark days of 20 years previous. That evening, at around 8.00pm, the Hindenburg – Germany's latest airship marvel and still the largest man-made object ever to fly at slightly less than the size of the Titanic – passed over Worthing. It was assumed by the majority of witnesses to have been taking photos of the coastal defences in the build up to an inevitable war and was therefore being 'buzzed' by small aircraft attempting, unsuccessfully, to edge the giant out to sea – with the "Great War being still in people's minds...The Zeppelin [*sic*] was not at all a welcome visitor²³⁵."

The Great Zeppelin Mystery

Whilst researching Zeppelin raids for this Case Study, the only recorded event in either British or German sources of a flight over West Sussex was that of the L31 on the night of 25-26 September 1916. However, several intriguing instances of other possible incursions by enemy airships over West Sussex were encountered, of which no information could be located to verify or dispute these occurrences, and thus still remain a mystery at the time of writing. The first is said to have occurred on 18 March 1916 and is featured in Edward Heron-Allen's 'Journal of the Great War', where he writes on 23 March "We had mild excitement on the 18th – a zeppelin was reported over Chichester harbour about 10 miles west of us [in Selsey], but the authorities preserve 'a wonderful silence' and we can get no information – or denial – of the rumour²³⁶." No further mention of this event is made. The next instance is in the form of a transcript of an interview in the Petworth Society Journal No117 from September 2004, in which Miles Costello recalls being held up by his grandfather at a house in Grove Street, Petworth, in 1918 so that he could see a German Zeppelin fly past. In the interview Mr Miles recounts how his grandfather "told me that the Zeppelin pilots used the South Downs to navigate their way along the coast. Perhaps it was heading towards Portsmouth on a bombing raid²³⁷." Another Petworth resident records an undated extract of his late mother's childhood memoirs on Valerie Martin's website:

"One night a Zeppelin came over the vicarage [at Oving] and the big guns bought [*sic*] it down – granny and I were very frightened. Two aeroplanes crashed and both pilots were killed. One was an officer and the other an ordinary pilot. They had a military funeral. I remember going across the fields to see the first plane that had come down. It was a two winged plane, which had one pilot²³⁸."

Again, no further reference to a Zeppelin over the Oving area could be found and neither could any other sources or anecdotes of one having been shot down over Sussex or Hampshire. A search of British airships was made for the benefit of this Case Study to see if there was a record of one having been downed over the south-east in the event that the Oving sighting was a misidentified British vessel. The most comprehensive source for this is Patrick Abbott's book 'The British Airship at War, 1914-1918' which has details of all British airships produced shows that of all

the rigid airships, only one was destroyed during the War years – the R27 which was accidentally wrecked in a hangar fire at Howden on the east coast²³⁹. Two other rigids were wrecked in 1921, but again, these were both well away from Oving. Similarly, whilst a number of non-rigid airships crashed or were shot down during the War, there are no records of any being downed in West Sussex. Regarding the other factor of this sighting, that of the two aeroplanes having crashed in the Oving area, a separate search of military aircraft crashes was made and 11 records were found for aircraft lost in West Sussex during the First World War, four of which were the result of a pair of aircraft colliding - none of these occurred at Oving. Similarly, the only crashes that could be found to have occurred at Oving were two during the Second World War involving monoplane fighters and not biplanes²⁴⁰. A list of all known and recorded aircraft losses in West Sussex during the First World War has been added as Appendix Nine at the end of this Case Study. However, the Commonwealth War Graves register shows that two airmen – Second Lieutenant Victor Raleigh Craigie and Captain N H England both of No92 Squadron Royal Air Force – whom died on 7 April 1918 are buried in Oving St Andrew's Churchyard Extension²⁴¹. This date coincides with one of the above mentioned collisions that is stated to have occurred at nearby Tangmere between a Sopwith Pup and an Avro 504A of No92 Squadron²⁴² – both being biplanes as per the description in the Zeppelin sighting, although no connection with a Zeppelin or other airship could be made for this fateful incident.



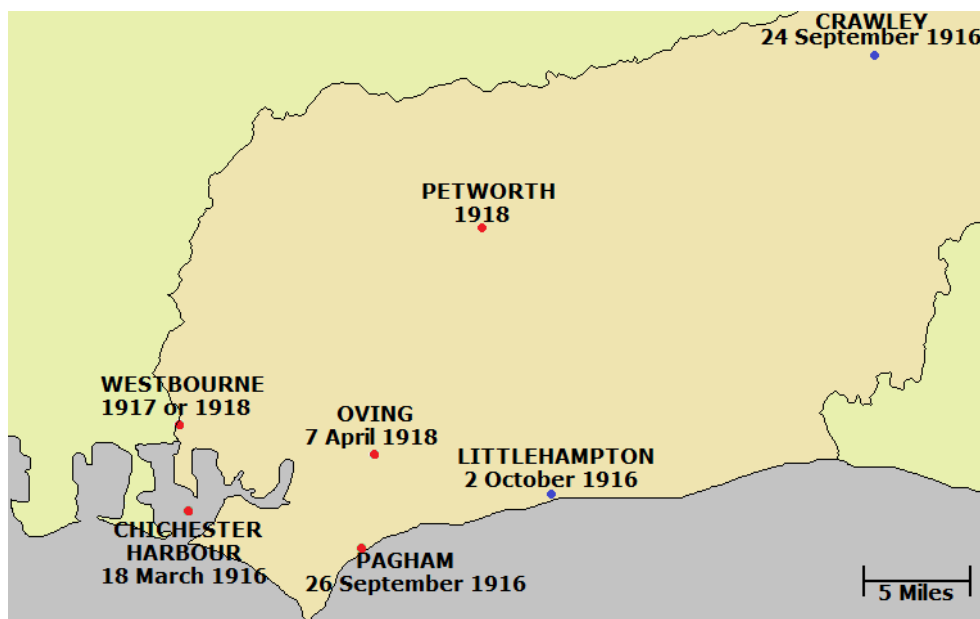
The 'mystery' late-War Zeppelin over Westbourne Rectory (now Westbourne Court) circa 1917 or 1918. Given the position of the photographer (identified by the trees), the airship would appear to be travelling west to east in daylight. Image courtesy of West Sussex Record Office reference number Photographs/PH/16822

Whilst the above events could be put down to a variety of factors such as mistaken memories due to the recollections being from early childhood; the effects of the passage of time on the memory as 80 or 90 years had passed since the events and the time of recording or even the result of rumour mongering as a possibility for the Heron-Allen entry (a not-to-unlikely fact given the example of gossip from the West

Sussex Gazette as referenced earlier in this Case Study²⁴³), there is one mysterious sighting in about 1917 or 1918 that cannot be explained away – the old adage 'the camera never lies' rings true. Indeed, this particular instance of an airship over Westbourne Rectory was caught on camera and the photograph is held at the West Sussex Record Office! Given that there is only one record of a Zeppelin flying over West Sussex (though not near Westbourne) one thought was that it might have been a British rigid airship, possibly resembling the R31 Class. However, upon investigation,

there were only two airships of this class that were built. R31 did not enter into service until five days before the Armistice in 1918 and only clocked five hours of flying time on its one and only in-service flight to East Fortune in Scotland, where it was put out of action due to damage caused by the stress upon the wooden frame. There is no evidence of R31 having ventured to the south-east coast during its pre-service trials. R32 did not enter service until after the War and again, there is no evidence of it having flown over Sussex at all²⁴⁴. So, in the interest of being thorough with the research for this Case Study, Dr Giles Camplin of the Airship Heritage Trust was contacted to help. He confirmed that the airship in the photo is indeed “a fairly late design of Zeppelin [based on] the configuration of fins and engine cars²⁴⁵.” He also stated the fact that “there were very few rigid airships (such as that depicted) that crossed the south coast in daylight during the First War” which brings about another dimension of mystery into this affair. With the possible exception of the Chichester Harbour occurrence, all the above sightings took place in broad daylight, a most unusual happening! As for the other mystery sightings, a possible explanation could be simply a misidentification of British airships, as Patrick Abbott describes regarding one event in August 1914:

“After daybreak [6th August 1914], flying home at a low height near the Kentish shore, the airship [Naval Airship No.4] was hoist with her own petard and fired upon by soldiers of an encamped Territorial Division who believed her – not entirely without reason, despite the large White Ensign she carried – to be a raiding German aircraft. No damage was sustained, however and P.4, as she was usually called, arrived back home safely if unexpectedly at 5.30 am after a patrol of ten and a half hours. For several days afterwards, it is said, the authorities were plagued by numerous reports from people claiming to have seen a marauding Zeppelin²⁴⁶.”



Locations of the mystery Zeppelin sightings (red) and sightings of known events other than the L31 on 25-26 September 1916 (blue) in West Sussex during the First World War.

Selsey Sound Mirror

The invention of Radio Direction Finding – or ‘Radar’ as it became known – was still several decades away during the First World War and one hoped



The Selsey Sound Mirror as it was in 2008. Courtesy of Andrew Grantham
www.andrewgrantham.co.uk

for solution was to collect and focus the sound of approaching aircraft via large concrete dishes, resembling the shape of a satellite dish placed in a variety of places along the north-eastern and south-eastern coasts of England. One such structure was built at Selsey in 1916. The exact date of when it became operational is not known, but construction was underway in March of that year²⁴⁷, and therefore it is not certain whether it was up and running by the time of the attack on Portsmouth by Kapitänleutnant Mathy in the L31. Writing on 17 August 1918, Edward Heron-Allen makes reference to the Sound Mirror as “the new search-lights and audiphones apparatus²⁴⁸” which could infer that the structure and the fourteen feet diameter acoustic mirror was built in 1916 but the actual equipment – a trumpet-like sound collector connected to a stethoscope which was moved across the face of the mirror by the operator in order to find the loudest signal by which readings could be taken to calculate the distance of the approaching aircraft²⁴⁹ – might not have been in place until much later in the War, or perhaps that construction took over two years to complete.

Whether or not the post was functioning or not on 25 September 1916 is not as important to the story of the Portsmouth Raid as it might first appear. The Admiralty continued the development and research into audio detection after the War until the 1930s when improvement in aircraft performance made the technology more or less obsolete with advance warning being no more than five to ten minutes and the latest study into radar was just becoming noticed by the authorities from 1936²⁵⁰. Furthermore, there is no evidence (at least not any that survives today) that any Sound Mirror was involved in the successful early detection of a Zeppelin during the First World War²⁵¹. It is therefore highly unlikely that the Sound Mirror at Selsey – or ‘Listening Post’ as it is affectionately known by locals²⁵² - would have given the Portsmouth defences anymore warning than that given by the 2/9 Hampshire Regiment patrol that spotted the airship from Pagham.



This Sound Mirror at Redcar is identical to how the one at Selsey would have appeared originally. Courtesy of Andrew Grantham
www.andrewgrantham.co.uk

The Sound Mirror still stands today, but is almost unrecognisable if it were not for a few tell tale signs as to its identity. By 1932²⁵³, the now obsolete relic of the War had amazingly been converted into a residential house, though before this it was used for a short time as an estate agent's office²⁵⁴! The curved face of the mirror formed one of the internal walls²⁵⁵ though at some point a single window was cut into it²⁵⁶. The structure is now also partly below the current ground level, as well as additional rooms



Another view of the Redcar Sound Mirror. Courtesy of Andrew Grantham
www.andrewgrantham.co.uk



The Selsey Sound Mirror in 2008. The window that has been cut through the curved face can be seen. Courtesy of Andrew Grantham
www.andrewgrantham.co.uk

established and extensions built²⁵⁷. Nonetheless, due to its historic value the 'Listening Post' was added to the Statutory List of Buildings of Special Architectural or Historic Interest with Grade II status on 12 March 1999²⁵⁸. Having become rather dilapidated and overgrown, it was sold in March 2008²⁵⁹ and received planning permission for the later extensions and additions to be demolished and the Sound Mirror to be restored to its original structure²⁶⁰.

Conclusion

The First World War left West Sussex largely unscathed physically, with most of the hardened defences being of a temporary construction and later returned to nature or swallowed up in post-Second World War urbanisation. Relatively little was done to actually defend West Sussex against invasion or attack from the air, with most of the precautions being in the form of Territorial Soldiers, Police and Special Constables and the Scouts engaging on regular coastal patrols and undertaking guard duty at vulnerable and strategic locations such as bridges and telecommunications infrastructure. Indeed, the fear and suspicion of neighbours created through rumour-mongering and hearsay had a far more potent effect upon the residents of West Sussex than any incursion by the enemy managed to achieve. Nonetheless, the only recorded air raid – that of L31 – was a wake-up call to the civilians and authorities alike as to the potential vulnerability to all people during the modern phenomenon of 'total warfare' – something that was sadly to be forced upon West Sussex only 20 years later. That being so, the biggest 'scar' left in the county after the Armistice on 11 November 1918 by far was the immense loss of men and women serving abroad and the holes left in families and communities by those who failed to return. Above all, the mistakes, false assumptions and new experiences for everyone in West Sussex were not wasted and the lessons learnt were put to full effect at an early stage in the build up to, and outbreak of, the Second World War, undoubtedly

saving many lives that might otherwise have been lost as a result of enemy action on the Home Front, and that must be one of the most valuable legacies of the First World War that I have come to understand and appreciate during the research into this Case Study.

Acknowledgements

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And finally, to Worthing Museum and Art Gallery for also allowing me access to their archives and for the use of the photograph of the Worthing Borough warning notice.

Appendices

Appendix One - List of White & Thompson, later Norman Thompson, aircraft produced at the Middleton-on-Sea aircraft factory

Serial Nos.	Qty.	Aircraft Type	Remarks
1171-1182	12	White & Thompson Biplane 'Bognor Bloater'	Fitted with 70hp Renault engines. Nos1180-1182 built for spares only and were not assembled ²⁶¹ .
1195-1200	6	White & Thompson No3 Flying Boat	Nos1195, 1197 and 1199 delivered to RNAS Dover; No1196 to RNAS Fort Grange and No1198 to RNAS Dundee ²⁶² .
1280-1299	20	White & Thompson (type unknown)	Contract cancelled. None built ²⁶³ .
1497-1508	12	White & Thompson (type unknown)	Cancelled order for seaplanes ²⁶⁴ .

3807-3808	2	White & Thompson No3 Flying Boat	120hp Beardmore. No3808 fitted with duel control ²⁶⁵ .
8338-8343	6	Norman Thompson NT4 'Small America'	²⁶⁶ .
8434-8439	6	Short S38	Fitted with 80hp Gnôme engines. Licence built by Norman Thompson Flight Company at Middleton-on-Sea ²⁶⁷ .
8530-8541	12	Short S38	Fitted with 80hp Gnôme engines. Licence built by Norman Thompson Flight Company at Middleton-on-Sea ²⁶⁸ .
9061-9064	4	Norman Thompson NT4A 'Small America'	160hp Green engines were planned, but 140hp Hispano engines fitted instead ²⁶⁹ .
N18-N19	2	Norman Thompson Cruiser Flying Boat	Experimental project for a flying boat with two 320hp Sunbeam engines ²⁷⁰ .
N26	1	Norman Thompson Flying Boat	Experimental project for a flying boat with one 140 hp Hispano engine ²⁷¹ .
N37	1	Norman Thompson N2A Tandem-Seater	Experimental flying boat fighter. Fitted with 150hp Hispano engine, later upgraded to 200hp model ²⁷² .
N82-N83	2	Norman Thompson N2C	Experimental projects. N82 first flew October 1918. N83 components were built, but not assembled into an aircraft ²⁷³ .
N107-N109	3	Norman Thompson School	Experimental project for a flying boat trainer. Contract cancelled. None built ²⁷⁴ .
N1040-N1059	20	Franco-British Aviation Flying Boat	Components built in France but assembled into aircraft by Norman Thompson Flight Company at Middleton-on-Sea ²⁷⁵ . N1059 used as a trainer at RNAS Calshot ²⁷⁶ .
N1180-N1189	10	White & Thompson Flying Boat	Experimental projects. NosN1180-N1185 had 120hp Beardmore engines fitted and NosN1186-N1189 had 150hp Hispano engines fitted ²⁷⁷ .
N2140-N2159	20	Norman Thompson NT4A 'Small America'	200hp Hispano engines fitted ²⁷⁸ .
N2260-N2359	100	Norman Thompson NT2B	Fitted with Sunbeam Arab engines. NosN2260-N2294 were delivered. NoN2284 was exhibited

			at the 1919 Atlantic City Exposition ²⁷⁹ .
N2400- N2429	30	Norman Thompson NT2B	All built, but majority were held in storage without engines until they were all scrapped ²⁸⁰ .
N2500- N2523	24	Norman Thompson NT2B	At least fourteen were license built by S E Saunders & Co and fitted with Sunbeam Arab engines ²⁸¹ .
N2555- N2579	25	Norman Thompson NT2B	Delivered from mid-December 1917 with options for 150hp or 200hp Hispano engines ²⁸² .
N2740- N2759	20	Norman Thompson NT4A	Ordered with 200hp Hispano engines fitted, but no record of delivery ²⁸³ .
N2760- N2789	30	Norman Thompson NT2B	Held in storage with Hispano engines fitted. NosN2785-N2789 are thought were not completed ²⁸⁴ .
N3300- N3374	75	Norman Thompson NT2B	Ordered to be licensed made by Supermarine, but contract was cancelled before construction began ²⁸⁵ .

Appendix Two - Volunteer Civil Guard Instructions

CHIEF CONSTABLE'S OFFICE,
HORSHAM,

17th August, 1914.

West Sussex Volunteer Civil Guard.

The West Sussex Civil Guard may be required to perform some of the undermentioned duties:—

1. To undergo elementary drill and musketry so as to become a fit and competent body to assist and support the police and thus to relieve the military. Drill centres will be arranged, and will be localised as far as possible.
2. To guard bridges and other important points, i.e., Water Works, Post Offices, Electric Light Stations, and Gas Works, etc.
3. **BRIDGES.** No persons should be allowed to loiter near a bridge, culvert, or interfere in any way with telegraph poles and wires, etc. Enquire of any person doing the above their business, and if Germans or Austrians their names and addresses. They should be asked for their permit from the police, and if not in possession of one they should be arrested and handed over at once to the nearest Police Constable. The names and addresses of all persons who have been questioned and any information gained should be handed in to the officer commanding their respective districts, who will if necessary report at once to the Police; or communicate direct to the police if more convenient.
4. To escort prisoners and to assist the Red Cross detachments.
5. The Civil Guard should report all Germans and Austrians if they know that they have in their possession any of the following articles:—FIREARMS, AMMUNITION, EXPLOSIVES; or material intended to be used for the manufacture of explosives; any Inflammable Liquids; any Signalling Apparatus, any Carrier Pigeons, and Motor Cars, Motor Cycles, Motor Boat, Yacht or Aircraft; any Cypher Code, any Telephone Installation, any Camera or other photographic apparatus; any Military or Naval Map, Chart or Handbook; they should detain such persons if necessary.
6. Each member of the Civil Guard will be required to sign an agreement form and a nominal roll will be kept at each centre.
7. Members of the Civil Guard are requested to warn all they can to be very careful not to photograph moving troops or to write to people that they have seen troops leaving, or to write anything that may be conveyed to the enemy, and which may prove detrimental to our Army or Navy.
8. Every possible care should be taken to prevent any damage being done which might hinder or delay the action of the War Office and to prevent any assistance being given to the enemy.

A. S. WILLIAMS.

Chief Constable.

Courtesy of West Sussex Record Office reference number MP 1235

Appendix Three - Chichester and Worthing Emergency Notices

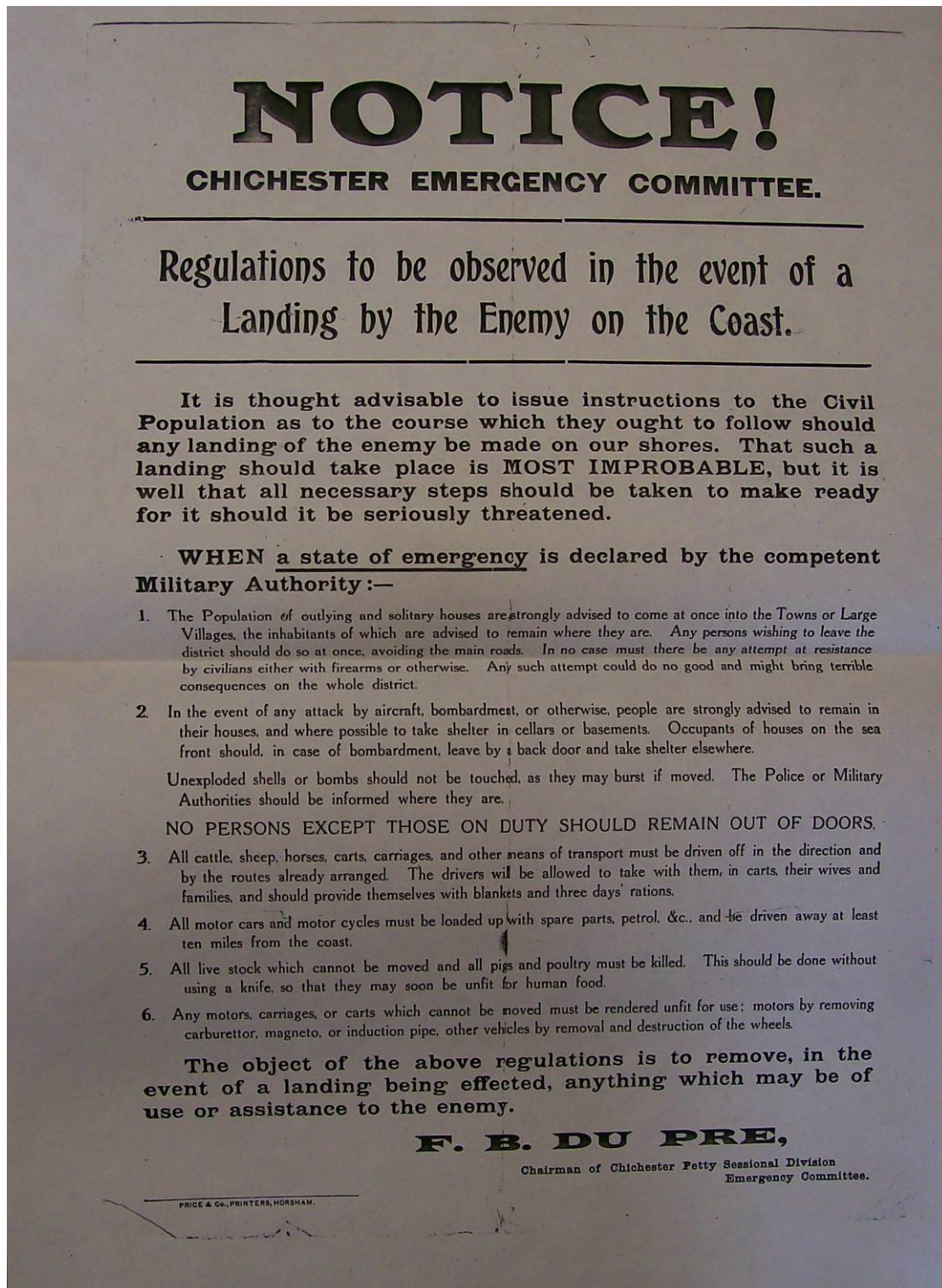


Image courtesy of West Sussex Record Office reference number MP 3148

Borough of Worthing.

WARNING

It is thought desirable that the public should be informed that in the event of the arrival of enemy Aircraft, the procedure as to the regulation of Lights will be as follows :---

All Street Lights will be at once extinguished.

The pressure of the Electric Light for private purposes will, as a signal, be twice reduced at short intervals and will then be kept low until the danger is past.

Those using Gas must extinguish the Lights.

Whilst I have no information leading me to think that there is any great probability of attack by Aircraft, I urge upon the public the need for these directions being observed rigidly.

In the event of any signal being given as above, the use of the telephone, except for most urgent reasons, should be avoided.

JAMES WHITE,

Mayor's Parlour,
Worthing,
20th April, 1915.

: Mayor.

WORTHING GAZETTE CO.

Courtesy of Worthing Museum and Art Gallery

Appendix Four - Transcripts of House of Commons Debates on Shoreham Mystery Towers

3 April 1922

Mr James Erskine: asked the Parliamentary Secretary to the Admiralty whether the so-called mystery tower in Shoreham Harbour is to be removed; for what purpose was it erected; what it cost; and whether it has ever been put to any use?

Lieutenant-Colonel Leo Amery: Objections having been raised to the retention of this tower in Shoreham Harbour, the Admiralty have decided that the most economical course is to demolish it. It was originally built as part of a scheme of defence which was not completed when the War ended. Its cost cannot be given separately, but the unfinished scheme cost about £1,266,000 [£26,851,860 in today's values²⁸⁶]. This tower has not been used²⁸⁷.

4 May 1922

Mr James Erskine: asked the Parliamentary Secretary to the Admiralty what was the actual cost of the tower in Shoreham harbour, and what it cost, or the estimated cost, to pull it down?

Commander Sir Bolton Eyres-Monsell: With regard to the first part of the question, I cannot add to the information given in the Parliamentary Secretary's reply to the Honourable Member's question on the 3 April. Tenders are about to be invited for the demolition of the tower, and until a contract has been placed for the work it would be inadvisable to publish the Admiralty's estimate of the cost²⁸⁸.

23 May 1922

Lieutenant-Commander the Honourable Joseph Kenworthy: I now come to a different item altogether, namely, the expenditure which the Admiralty are incurring upon the very romantic project of the towers which are at present moored at Shoreham. I refer to the expenditure of £17,700 under the heading of, "Defence Works (MN Scheme)." The history of these towers is, as I have said, very romantic. During the unique conditions of the late War, in which we were caught napping as regards the German submarine menace, it was necessary, at all costs, to find some means of preventing German submarines from running through the Straits of Dover, and someone hit upon the idea of making concrete and steel towers which could be towed out and sunk on certain selected sandbanks in the Channel. On those towers were to be mounted searchlights and guns, and they were also to be equipped with listening apparatus—hydrophones—for detecting submarines, and with firing apparatus for exploding the minefields through which the submarines might be passing. This was very good from the point of view of the War, but, unfortunately, it was hit upon rather too late. The Armistice came, and I believe that none of these towers have been so far completed as to be actually used, and the Admiralty were faced with the question what was to be done with them. I am afraid that this was one of those schemes which gave rise in the Admiralty to a separate Department, with its own permanent staff, and they brought forward very good reasons for continuing the construction of these towers. They have cost, to date, £1,162,000 [£24,646,020 in today's values²⁸⁹], and the total amount which it is proposed to spend on

them is, apparently, £1,180,000 [£25,027,800 today²⁹⁰], of which we are asked this year for £217,700 [£4,617,417 today²⁹¹]. May I respectfully ask what these towers are really going to be used for? It is no use saying that they are wanted for hydrophone experiments, because such experiments can be carried out from the shore, and for all practical purposes a concrete tower is no different, whether it is on dry land or fixed on a sandbank with a few feet of water round its base. Are they to be used for night-firing tests? I submit that such tests can be just as well carried out from the shore. Are they going to be used as lighthouses, as I have seen suggested in the Press? In the meantime, why are they at Shoreham spoiling the beautiful little harbour and annoying the local inhabitants? The additional expenditure on these towers—I think that this expenditure on the MN Scheme is for these towers—is a wicked waste of money, and I would suggest that we set to work to get rid of them. Blow them up, or tow them out to sea and sink them, but do not go on spending money on these costly white elephants. Their only possible use was in the unique conditions of the late War. I do not know how it is proposed to use them in any future war. Is it proposed to tow them out to Singapore or Bermuda and use them there? I cannot conceive of their ever being used in the Channel for the purpose of keeping German submarines from running through the Straits of Dover.

Viscount Francis Curzon: ...I wish now to refer to the mystery towers which have been referred to by the hon. and gallant Member for Central Hull (Lieutenant-Commander Kenworthy). I know them very well. After the Armistice the work went on these two towers by night and day, and men were working overtime in continual shifts to get them completed. The Admiralty must have had some object in view when they were pushing this work through at great cost, for the overtime cost must have been terrific. Now they have got them completed, and one is in use as a substitute for the Nab lightship. The other remains at Shoreham, to the disgust of the local inhabitants and anybody who has anything to do with the harbour. It is there as a monument of national waste. It is stated now that it is proposed to take it to pieces. An honourable Member suggested that it should be blown up. I do not think that he could have been at Shoreham or he would not have suggested that. The demolition of the structure, which is of reinforced concrete, would require a great deal of money. Why do the Admiralty not try to use it? Is it because they cannot get it out of the harbour now that it is built? If they got one out, why cannot they get out the other; and why cannot they use the second for the same purpose as the first, as a substitute for a lightship? I would ask the Admiralty to give a little detailed explanation about these mystery towers, because a great many people who have seen them think that they are a monument of waste.

Commander Sir Bolton Eyres-Monsell: ...I think I am now left only with the MN scheme to deal with. I am very glad to be able once more to anticipate the wishes of honourable Members in regard to the question of the abolition of the towers. That is why we are asking for this particular amount of money. The MN scheme was one of the legacies of the War. Fourteen of these towers were left but only two were retained because they had gone to such an advanced stage that we thought we might as well see what could be made of them. The other 12 were demolished. One of these towers as has been pointed out, is in the position of the Nab Light

and is being used as a lighthouse. It is also being used in carrying out some experiments, but I hope the Committee will not press me on that point. The tower at Shoreham has been one of the most difficult things with which we have had to deal. We have had meeting after meeting endeavouring to decide how to dispose of it. They will not have it any longer at Shoreham. We have done our utmost to sell it. We have done our utmost to use it for the purpose of giving people an opportunity of surveying the surrounding view. We have tried every means in our power and now we are asking for £17,000 [£360,570 in today's values²⁹²] to demolish it as it stands, and I hope we shall hear nothing more about it.

Rear-Admiral Thomas ADAIR: Why not take it out and lose it.

Commander Sir Bolton Eyres-Monsell: Because it would cost something like £60,000 [£1,272,600 today²⁹³] to get it anywhere. I sat on two or three committees dealing with this matter and I think we considered every possible way of disposing of it and found that this would be the cheapest.

Lieutenant-Commander the Honourable Joseph Kenworthy: I thank the honourable and gallant Gentleman for the very full answers he has given to all the questions, but it is not quite clear why £17,000 is required to break up these costly towers, or the one remaining now. Why did we go on with these after the Armistice, spending £1,000,000 on them, and then asking for another £17,000 for the purpose of undoing the work put into them?

Commander Sir Bolton Eyres-Monsell: We spent £1,000,000 on building two, and one, of course, is in use; but most of that money was spent in demolishing the other 12²⁹⁴.

Appendix Five - Sea Scout Zero Airships based at RNAS Polegate

Note that an '*' in the second column denotes there is evidence that this particular airship was definitely moored at Slindon at some point during the First World War.

Airship		Delivered	Fate	Details
SSZ 6		July 1917	Deleted October 1919	Total hours flown – 1033 ²⁹⁵ . Built at Polegate. Deflated 12 December 1918 ²⁹⁶ .
SSZ 7		July 1917	Destroyed 20 December 1917	Total Hours flown – 376 ²⁹⁷ . Built at Polegate. Made landing in fog on 20 December 1917 and collided with SSZ 10 and destroyed in ensuing fire. Flight Sub-Lieutenant Swallow killed ²⁹⁸ .
SSZ 8		July 1917	Deleted October 1919	Total hours flown – 1214 ²⁹⁹ . Built at Polegate. Deflated 10 December 1918 ³⁰⁰ .
SSZ 9		July 1917	Deleted 22 January 1919	Total hours flown – 1027 ³⁰¹ . Built at Polegate. Lieutenant Morlebury made a forced landing near Bertouville, France, 24 August 1918 and subsequently deleted from register in January 1918 ³⁰² .
SSZ 10		August 1917	Destroyed 20 December 1917	Total hours flown – 320 ³⁰³ . Built at Polegate. Made a landing in fog on 20 December 1917 and collided with SSZ 7 and destroyed in ensuing fire. Flight Lieutenant Watson injured ³⁰⁴ .
SSZ 19		October 1917	Deleted October 1919	Total hours flown – 1001 ³⁰⁵ . Built at Polegate. Deflated 28 January 1919 ³⁰⁶ .
SSZ 27		February 1918	Deleted October 1919	Total hours flown – 82 ³⁰⁷ . Built at Wormwood Scrubs in eight days. Served at RNAS Polegate 15 February 1918 to 25 March 1918. Crashed into Channel off Cornwall 12 April 1918 after the trawler Marne II ³⁰⁸ fired at a sea mine and the ricochets hit SSZ 19's envelope. Salvaged by trawler crew and returned to service May 1918. Deflated 10 December 1918 ³⁰⁹ .
SSZ 28	*	February 1918	Deleted October 1919	Total hours flown – 932 ³¹⁰ . Built at Wormwood Scrubs. Served at Polegate from 17

				February 1918. Made a record flight of 26 hours 10 minutes on night of 26-27 June 1918 by Lieutenant Protheroe. Deflated 29 January 1919 ³¹¹ .
SSZ 30	*	February 1918	Deleted October 1919	Total hours flown – 94 ³¹² . Built at Wormwood Scrubs. Served at Polegate from 27 February 1918. Deflated 20 January 1919 ³¹³ .
SSZ 41		April 1918	Deleted 28 January 1919	Total hours flown – 760 ³¹⁴ . Built at Wormwood Scrubs. Deflated 28 January 1919 ³¹⁵ .
SSZ 42		April 1918	Deleted October 1919	Total hours flown – 579 ³¹⁶ . Built at Wormwood Scrubs in 62 days. Served at Polegate from 25 April 1918 to 26 April 1918. Deflated 7 November 1918 due to defective envelope ³¹⁷ .
SSZ 43	*	May 1918	Deleted October 1919	Total hours flown – 566 ³¹⁸ . Built at Wormwood Scrubs. Delivered to Polegate 2 May 1918. Deflated 12 December 1918 ³¹⁹ .
SSZ 44		May 1918	Deleted October 1919	Total hours flown – 373 ³²⁰ . Built at Wormwood Scrubs. Delivered to Polegate 8 May 1918. Last flight made in November 1918 and was deflated 18 January 1919 ³²¹ .
SSZ 48		May 1918	Deleted October 1919	Total hours flown – 553 ³²² . Built at Wormwood Scrubs. Delivered to Polegate 17 May 1918. It suffered a forced landing at Tangmere due to an unserviceable engine and was deflated. Repaired but made another forced landing on 20 September 1918 at Horton Common, damaging the envelope. Deflated 26 January 1919 ³²³ .

Appendix Six - Zeppelin Raids on England by Kapitänleutnant Heinrich Mathy

13-14 January 1915 (night) – Attempted raid on England in L5 just three days after he joined the Naval Airship Division. Yet to receive command of an airship, Strasser handed L5 over to Mathy temporarily³²⁴. Bad weather and heavy rain forced Mathy to abandon mission whilst over the North Sea³²⁵.

14 April 1915 (day) – Mine laying operation in North Sea in L9, but airship was instead armed with 10 110-pound explosive and 40 incendiary bombs. After reaching point 100 miles off English coast, Mathy gained permission to carry out a raid at his own discretion owing to favourable weather conditions. Target was Tyne area shipyards, because older Zeppelins could not reach that far, but he miscalculated navigation and broke land nine miles north of Tynemouth and actually bombed open countryside amongst small mining villages, the only damage being a scorched barn roof by an incendiary bomb. Later, he reached Wallsend but only had a few bombs left which only slightly damaged one house and injured two people³²⁶. There was rivalry between Naval airships and Army airships about who would be first to raid London. All four army airships attempted on 17 March but got lost in thick fog. By mid-April all army airships were destroyed or out of action, so Mathy took advantage of their inability to fly and commanded his own airship on a raid for the first time³²⁷. Result - None killed, two injured, £55 damage³²⁸ (£2368.30 today³²⁹).

3 May 1915 (day) – Attacked four British submarines in North Sea in L9, only causing very minor damage to one³³⁰.

11 May 1915 (day) – L9 en-route to attack England, but spotted four more submarines and engaged. All bombs fell short and no damage was done. With no bombs left, Mathy abandoned the raid³³¹.

6-7 June 1915 (night) – Three army airships again attempted a raid on London, but the Naval Division also set up a raid for that same night for the same target – a solo raid by Mathy in L9. It is not known if each force knew of the others plans, or if the Navy made last minute plans to challenge the army's intent to be the first to reach London. All army airships again thwarted by thick fog over North Sea and poor conditions also prevented L9 from attacking London in cover of darkness so Mathy instead attacked Hull. He dropped 13 explosive bombs and more than 40 incendiary bombs, killing 24 and injuring more than 40, some 40 to 50 houses and shops were demolished. He dropped remainder of bomb load on Grimsby causing minor damage. Total damage by Mathy estimated at £44,795³³² (£1,928,872.70 today³³³).

9-10 August 1915 (night) – The first squadron-sized raid on London planned for the daytime of 9 August, but called off in favour of pursuing Royal Navy ships in North Sea. In the afternoon, the raid was permitted

for that night and Mathy, now in L13, was forced to turn back just before reaching the English coast with engine trouble, jettisoning 120 bombs in the sea to lighten the airship³³⁴.

12-13 August 1915 (night) – L13 departed base with target of London. Mathy turned back with mechanical troubles before reaching the English coast³³⁵.

17-18 August 1915 (night) – L13 departed base on attempted attack on London. Once again engine trouble forced an early return³³⁶.

8-9 September 1915 (night) – L13 attacked London alone, carrying for the first time a 300kg bomb – the largest ever carried across England to date. Result – 22 killed and £534,287 damage (£23,006,398.22 today³³⁷). This was one of the most casualties ever caused by an air raid on England for the whole of the War, and this raid alone caused over a sixth of all air-raid damage in England during 1915-1918³³⁸. This solo attack was in response to an order from Strasser following the success of three army airships in making a raid on London for the first time the previous night³³⁹.

13-14 September 1915 (night) – Attempted raid on London, but only L13 was able to reach England due to weather. Spotted by the six-pounder gun at Felixstowe and received a direct hit from one of 12 anti-aircraft shells fired which pierced gas Cells 11 and 12, the fuel line and radio power cable. Mathy was forced to dump all bombs immediately (barely any damage caused, probably all fell into the harbour or sea) and headed back to base. The British ground forces never knew the reason why L13 turned back because the airship was completely hidden by clouds and the gun was aimed by sound alone³⁴⁰. He was forced to fly across neutral Holland in order to reach base³⁴¹. Result - No casualties, £2 damage³⁴² (£86.12 today³⁴³).

13-14 October 1915 (night) – Raid on London led by Mathy which proved to be one of the deadliest of the war. 38 killed and 87 injured, though damage was only a tenth of that caused by Mathy on 8 September – about £80,020³⁴⁴ (£3,445,661.20 today³⁴⁵). Total casualties from elsewhere added to London came to 71 killed, 128 injured. This was the first Squadron raid on London and the last attack on London for almost a year³⁴⁶.

31 January-1 February 1916 (night) – L13 in raid on Midlands. Mathy bombed Stoke-on-Trent with little damage and then Scunthorpe, killing three, injuring seven and slightly damaging a steel works³⁴⁷.

5-6 March 1916 (night) – L13 in attempted raid on the Firth of Forth but winds were so strong that he was blown off course. Mathy turned south to what he thought was the Humber, but was actually found to be the Thames, and was forced to jettison majority of bomb load (no damage or casualties caused³⁴⁸) to gain height and intense anti-aircraft fire forced him to return to base³⁴⁹.

31 March-1 April 1916 (night) – The official target was London but the warm temperatures meant L13 could not fly at a safe height to attack London and so Mathy decided to bomb an explosives factory at Stowmarket instead. He was unable to find it and so tried to attack the anti-aircraft positions instead, not realising that he was right over the factory. The only damage was to the windows, but one gun scored a direct hit on gas Cell 10 and a second hit on Cell 16, forcing L13 to return to base³⁵⁰. The damage to L13 was confirmed to the British when the signal reporting Mathy's return to base was blown overboard after transmission and was found the next morning³⁵¹.

2-3 April 1916 (night) – L13 took part in another attempted raid on Scotland, but turned back early with engine trouble³⁵².

5-6 April 1916 (night) – L13 on another attempted raid to northern England, but mechanical trouble once again prevented L13 reaching the coast³⁵³.

28-29 July 1916 (night) – Mathy was making his first raid in L31 against England, targeting the east coast area. L31 made landfall at Newark but only remained in the coastal region. Six airships took part in the raid, dropping nearly 70 bombs between them which all mostly dropped on open ground and caused no casualties and £257 damage³⁵⁴ (£11,066.42 today³⁵⁵).

31 July-1 August 1916 (night) – Raid on south-east England. L31 briefly flew over Thanet in mistake for London and all bombs dropped were in open country³⁵⁶.

2-3 August 1916 (night) – L31 again made a brief flight over the Kent coast and dropped bombs in the sea off Dover, thinking he was over London³⁵⁷.

8-9 August 1916 (night) – L31 on raid targeting the north-east of England. The details of Mathy's personal involvement is not known but the overall result of the combined attack was 10 killed, 16 injured and £13,196 damage³⁵⁸ (£568,219.76 today³⁵⁹).

18 August 1916 (day) – L31 patrolled the North Sea and the northern English-southern Scottish coastlines to direct the German Fleet on an attempted bombardment of Sunderland³⁶⁰.

24-25 August 1916 (night) – Raid on south-east England, but L31 was delayed over the Channel with engine problems before following the Thames into London and dropping 36 explosive and eight incendiary bombs causing £130,000 (£5,597,800 today³⁶¹) of the night's total of £130,203 damage (£5,606,541.18 today³⁶²) with nine killed and 40 wounded³⁶³. A direct hit was made on Deptford power station. On landing back in Germany, L31 hit the ground hard by accident, causing extensive damage and put the airship out of action until a test flight on 21 September³⁶⁴.

23-24 September 1916 (night) – L31 departed Germany for a raid on London. The British were by now using phosphorous ammunition. L31 took the Channel route and made landfall at Dungeness on a direct course for London. He Dropped 10 128-pound bombs at Dungeness Lighthouse to lighten the load, but all thankfully missed and no damage was done. He then headed to London via Tunbridge Wells and Croydon, where he dropped a parachute flare to check his position which had the unintended consequence of temporarily blinding the anti-aircraft gunners making them unable to locate L31. He took a direct course straight across the capital – the first time ever this had been done, causing huge damage, killing 13 and injuring 33³⁶⁵.

25-26 September 1916 (night) – Raid on Portsmouth in L31.

1-2 October 1916 (night) – Attempted raid on London via the North Sea. L31 shot down by Second Lieutenant W J Tempest over Potters Bar.

Appendix Seven - Newspaper articles of Portsmouth Raid

Chichester Observer 27 September 1916

"As most people are aware it would be contrary to the regulations to reproduce in print all that has been heard about the latest Zeppelin raid on Monday night but the 'Observer' circulates over a fairly wide area, and there can be no harm in stating that the raid or rather a minor part of it was more of a 'local' character than any before. The first official report, as issued by Lord French was as follows

Monday, 11.45pm

Several hostile airships crossed the east and north-east coasts between 10.30pm and midnight. Bombs dropped at several places in the northern and north midland counties. An airship also reported off south coast. No reports of casualties or damage yet received. Lord French issued the following communiqué yesterday morning at 3.15: Several hostile airships – probably six in number – visited the north-eastern and southern counties during the night. Bombs were dropped in the northern counties and some casualties and damage are reported. Full reports have not yet been received. Shortly before midnight people were awakened by the firing of guns which shook the windows and many of the residents of more than one town and village rose from their beds to ascertain the cause. The Fire Brigade and Special Constables – not all of them, by the way – turned out in case of emergency, but happily their services were not required, for whatever stories one may hear, there was no damage whatever reported in this district. There are some who declare that they saw a 'Zepp,' and others who apparently believe that bombs were dropped on one of our south coast resorts, but the latter is not true. Neither is it correct that one was brought down in this neighbourhood. So far as one can gather an airship came from an easterly direction several miles south of the coast. After travelling for some distance it turned inland, and upon being engaged by our anti-aircraft guns it made its way back in a north-easterly direction³⁶⁶."

The Times 27 September 1916

"There was another raid by several hostile airships last night between 10.30 and midnight. Bombs were dropped in the northern and north-eastern counties. An airship was reported off the South Coast. The communiqué issued about midnight last night said that no reports of casualties or damage had been received³⁶⁷."

The Times 27 September 1916

"A German airship visited the southern coast last night. She seemed merely on a reconnoitring cruise, for she dropped on bombs on any of the places over which she passed. Just before midnight the Zeppelin was distinguished coming in from the sea. It was exceedingly dark at the time, but within a few minutes the intruder found the searchlights casting a halo round her. Powerful beams seized her, as it were, and their rays maintained their grip upon the airship unrelaxed for as long as she remained. Meanwhile the guns were loosed. For some 20 minutes they kept up a furious clatter, and the Zeppelin seemed not a little startled by it. Hastily she climbed to a higher altitude, where she looked only about the size of a big cigar; speedily she headed for the sheltering darkness of

the open fields. Very soon she had disappeared. Little excitement was caused. Most of the inhabitants regarded the artillery attack upon her as a repetition of the frequent practice firing by the defences, and did not trouble to leave their beds. The Zeppelin had been gone hours before they knew that she had been there at all, and probably never has the visit of a hostile airship caused less excitement anywhere³⁶⁸."

The Times 27 September 1916

"The Zeppelin which came to the South Coast got what must have been an unpleasant surprise as she was returning inland from her excursion. At a remote place visited only by those who have a taste for the wide and lonely spaces of Nature, she stopped her engines, turned on her electric lights, and rested. She made a fine spectacle, hanging thus suspended in the heavens, a blaze of light, which she must have thought could be observed – if at all – by shepherds who happened to be abroad, anxious about their flocks. Bang! bang! swish! crash! and shrapnel burst around her. Out went her lights. Then, groping blindly about for a few minutes, she disappeared. She was not hit, but she was taught the lesson that there is hardly a place in England now where a raider can show herself with impunity. As she fled she dropped a couple of bombs, perhaps in defiance, or, perhaps to lighten her load in order to escape more quickly. The bombs fell harmlessly in the fields³⁶⁹."

The Times 28 September 1916

"'German Tale Of Bombs On Portsmouth'. Amsterdam, Sept 26 – The following official communiqué was received here from Berlin: - On the night of September 25-26 a section of our naval airships lavishly bombarded with explosive and incendiary bombs, with visibly good results, the British naval port of Portsmouth, the 'reinforced' places at the north of the Thames, and industrial and railway installations of military importance in Central England, including York, Leeds, Lincoln, and Derby. In spite of strong enemy attacks, our airships returned undamaged – Chief of the Naval Staff³⁷⁰."

Chichester Observer 11 October 1916

"It is not many days since the Zeppelin wandered round to this quarter of the globe. Exactly what its intentions were many would like to know. If this particular strafing party were bent on destroying fortifications or other works of military importance, as they subsequently, with characteristic German mendacity, declare they had done, then the expedition was in vain, for as all who care to ascertain for themselves may know, no damage whatever was caused. If the object was to spy out the nakedness of the land in regard to local equipment in the way of anti-aircraft defences, here again disappointment awaited the uninvited but readily welcomed visitors, for a warm reception was accorded them, and when the guns spoke, it was observed that the raider had perforce to climb to a higher and safer altitude.

Possible, however, the aim of this Zepp. was merely frightfulness; yet once again they were doomed to failure, for those below most concerned about the visit were those of the population who slept so soundly as not to have been disturbed while such a highly instructive and unrehearsed pyrotechnic display was in progress.

The Zeppelin that many people 'saw,' was, one fears, but imaginary, else a whole fleet of these monsters of the air must have taken part in the visit. In fact, for all the talk about the raid on the following day, there might have been 'a squadron of our Naval airships,' – to use the high-sounded phrase so beloved by the compiler of those interesting German official communiques.

In endeavouring to account for the phenomenon [*sic*] of the ship in question being seen in many places at or about the same time, an acquaintance points out that the nocturnal visit was made just after most people had partaken supper. The acquaintance in question, however, was evidently one of those attacked with a fit of envy of those more fortunate than himself who were privileged to see the firework display which accompanied the stranger's aimless wanderings over this part of the world, and its ultimate return to Hunland³⁷¹."

Chichester Observer 18 October 1916

"THE NIGHT OF THE ZEPPELIN RAID. MYSTERIOUS FLASHES AT SELSEY. LONDON BANK MANAGER DENIES SERIOUS ALLEGATIONS. REMARKABLE CASE INVESTIGATED AT CHICHESTER.

A Selsey lighting case of exceptional interest engaged the attention of the magistrates for several hours at the Chichester County Petty Sessions on Saturday. It was heard in the second court before Mr W H B Fletcher (in the chair), Colonel H D Fryer, and Admiral Holland.

The defendant was a London bank manager, residing at Burwood Place, Hyde Park, and Sandy Hill, Selsey, who was summoned for not reducing or shading an inside light, or so screening the windows, as required, at Selsey, on September 25th. He pleaded not guilty, and was defended by Mr F B Tompkins.

At the outset a note was taken of an objection by Mr Tompkins as to the wording of the summons.

Mrs Allan Wilkins, who said her name was Iné de la Garde, of Westcliffe, Seal Road, Selsey, was the first witness. She said she had been summoned as a witness, and she produced a model of defendant's house, which was placed on the table in front of the magistrates. On Monday, September 25th, at 11pm she was outside defendant's house in a field when she saw a light coming from the north side. The light opened very slowly and then came out extraordinarily brilliant. There were three slow flashes, and then three quick flashes from the top west window. This occurred on the night of a Zeppelin raid, and she reported the matter to the War Signal Station.

Replying to Inspector Brett she said she made the complaint before she knew anything about the Zeppelins.

By Mr Tompkins: She had been watching defendant's house the whole evening.

Mr Tompkins: Have you been accusing Mr Cross of signalling to the Germans? Have you accused him of signalling to the Zeppelins?

[Mrs Wilkins:] In my opinion it was a signal.

You say you have seen these lights. I put it to you they were imaginary or that you are mistaken? – Certainly not.

Do you know Mr Heron Allen? – Yes.

Do you know that he thought he saw lights from the south side, and then found he was mistaken? – I don't know that.

The witness also said that she waited there until half-past two, when PC Hampshire came, and then she saw Mr and Mrs Cross. A Sea Scout fetched the policeman.

Were these flashes anything more than would be made by a person passing the windows with a candle? – Yes very much more.

Mrs Olive Chaplin, wife of Captain Alfred Chaplin, of Westcliffe, Selsey, said she came down from London on this Monday and she was with the last witness in the field round about 11 pm. She saw the flashes in the north window, and the light was as strong as the head light of a motor car.

Mrs Ethel Benjamin, wife of Mr Alfred Benjamin, of Rest Cottage, Selsey, a stockbroker, spoke to watching defendant's house from Westcliffe from about twenty minutes to ten until after eleven. During that time she saw the light appear about four times. At first it was feint, and then amazingly bright. She watched from a room which was in darkness, and part of the time the other two ladies were with her.

By Mr Tompkins: She thought the lights were for a signal to the Zeppelins.

Miss Rose Wells, of Rest Cottage, also deposed to seeing the lights. PC Hampshire said at 2.30am on September 26th he went to Sandy Bill in consequence of a complaint. He saw Mr Cross, who said he was responsible for the lights. The window referred to by the other witnesses had no blind at all. It was the window of a landing on the staircase, and the glass was blurred. There was no source of light near, except a candle which Mr Cross had. Mr Cross produced a torch, which he said was the only one in the house with the exception of a broken one.

Mr Tompkins: Who did you have with you?

[PC Hampshire:] I had two soldiers outside, and I had two of the witnesses with me, Mrs Wilkins and Mrs Chaplin.

Defendant asked him to look over the house and search it, which he did, and found nothing. He had been stationed at Selsey since June 6th, and had noticed nothing at this window before, although a previous tenant of the house was summoned for a light there.

This concluded the case for the prosecution.

In his address for the defence Mr Tompkins said a most serious charge had been brought against his client, who was not altogether sorry to have the opportunity of contradicting it, especially in a place like Selsey. It was an abominable accusation to make against Mr Cross, who was an Englishman and had been manager for twenty-seven years of the Farringdon Street branch of the London and Provincial Bank. He was educated at Charterhouse, and his father was also a bank manager for many years before becoming a director. There were no suspicious that the defendant would act otherwise than as an Englishman should, and the mere fact that these vile slanders had been brought against him had annoyed him extremely. He asked the sympathy of the Bench with him in the matter. He and his wife would tell them what happened all through this particular evening from the time they came home at 8pm until they went to bed, and he was sure they would satisfy them that these witnesses had been mistaken.

The defendant then gave evidence, and said he took the house at Selsey from Captain Hare. All the windows were obscured with the exception of the one in question, which was of Murinese glass. This was inclined to

intensify the light, but one could not see through it. He proceeded to describe the movements of himself and his wife in the house throughout the evening. His wife used a candle and they also had a small shilling electric torch belonging to his boy for going about the house and up and down stairs. They went to bed just before eleven, and he went to sleep at once. He was awakened at 2.30 by the police constable. He did not know there had been an air raid. One of the women accused him of using a revolving light and signalling. He said he was amazed and absolutely knew nothing about it. He told them to make a search of everything and everyone in the house. The constable went in and searched the house. On the following night Inspector Brett came to the house, and they rehearsed what they had done the previous evening. From outside there was certainly a glow, but it was a matter of opinion whether it was a subdued light. If it had been facing the sea he should have said there ought to be a curtain over the window. In his London house at the bank he had forty-nine windows, and the police had never asked him to screen the windows more than they were. During part of the evening, while he and Mrs Cross were out, there were two maids and three children left in the house. Mrs Cross also gave evidence.

In announcing the decision of the magistrates, the Chairman said the Bench were of the opinion that there was not the slightest suggestion of signalling, the light being caused by a candle passing in front of the window, which was not obscured, and for this defendant would be fined £1 [£43.06 in today's values³⁷²]³⁷³."

Appendix Eight - West Sussex Aerial Raid Defence Scheme

West Sussex Aerial Raid Defence Scheme.

The following very comprehensive Schedule of orders and actions necessary if an air raid occurs, compiled by Colonel Young, Military Representative and Head Special Constable of the Steyning Division, should help Head Special Constables, Superintendents, and Special Constables in their arrangements to meet such an emergency.

A. S. WILLIAMS,
Chief Constable of West Sussex.

AIR RAIDS.

General Orders for Special Constables.

I.—Post up in Head Quarters:—

- (a) Alarm signal.
- (b) Alarm post (Police Station suggested).
- (c) Copies of all public notices.
- (d) Telephone numbers of nearest Police Station, Fire Station, and Doctors.
- (e) List of places where emergency apparatus can be obtained, as ropes, crow-bars, spades, &c., buckets, splints and bandages, sacks, &c.—viz., builders' yards, garages, &c.

II.—System of speedy rallying at alarm post.

III.—Instruction of Special Constables in:—

- (a) First aid.
- (b) How to enter burning buildings and rooms.
- (c) How to extinguish fires.
- (d) How to improvise and use emergency escapes.
- (e) Position of water cocks, fire plugs, hydrants, and hose.

In anticipation of a Raid

(action to be taken **now**).

Warn all inhabitants, in event of a raid, to:—

- (a) Avoid streets and crowds and take shelter at once.
- (b) Turn off gas at meter and see that all gas taps are turned off.
- (c) Strengthen top floors by spreading mattresses, linoleum, &c., to deaden and spread shock of falling masonry.
- (d) Select safest places, *e.g.*, cellars and under arches.
- (e) Fill buckets with water.
- (f) Avoid upper floors and windows.
- (g) Provide emergency lights, *e.g.*, candles, night lights.

[P. T. O.]

Aircraft Raid.

Organize beforehand measures to minimize the following dangers:—

- (a) From traffic, fires, accidents, and panics;
- (b) From broken gas pipes, water service, telegraph wires, damaged walls and roofs;
- (c) From unexploded bombs.

On appearance of enemy raider.

- I. Inform police.
- II. Sound alarm.
- III. Help aged and infirm to safety.
- IV. Detail men to assist police to stop motor traffic.

After Raid.

If near scene of damage:—

- (a) Call attention to dangers from explosives, insecure roofs, and chimneys—broken services and wires.
- (b) Give first aid.
- (c) Guard unexploded bombs, which are not to be touched.
- (d) Guard against looting and generally assist police.
- (e) Act as messengers.
- (f) Collect information as to:—
 - (1) Description of air craft.
 - (2) Time of raid.
 - (3) Direction of flight.
 - (4) Pieces of shell for identification.
- (g) Arrange with authorities for speedy repair of wires and services.

Images courtesy of West Sussex Record Office reference number MP 1235

Appendix Nine – Aircraft Losses in West Sussex 1914-1918

This list only includes those incidents that were (i) recorded at the time and (ii) resulted in the aircraft having been written-off. Incidents in which the aircraft was repaired and re-entered service are not included.

10 August 1914 – Avro 504 serial number 889 crashed at Shoreham on delivery to the RNAS³⁷⁴. This aeroplane had been on the civil register but was impressed into military service³⁷⁵.

24 September 1915 – Maurice Farman S11 Shorthorn serial number 8107 based at RNAS Shoreham crashed at the base³⁷⁶. This had been one of a batch of 12 French-built Shorthorns delivered to the RNAS³⁷⁷.

25 August 1917 – Royal Aircraft Factory SE5a serial number B537 of the Royal Aircraft Establishment, Farnborough. It suffered engine failure and made a forced landing at Haywards Heath, during which it hit a hedge³⁷⁸. It had been one of a batch of 200 SE5as built by Vickers Limited at Weybridge, Surrey³⁷⁹.

19 January 1918 – Sopwith Pup serial number B6096 of No3 Training Squadron based at Shoreham. The flight controls were jammed by the pilot's foot and the aircraft spun into the ground at or near the base³⁸⁰. This was one of 250 Pups delivered from The Standard Motor Company Limited, Coventry³⁸¹.

8 February 1918 – Sopwith F1 Camel serial number B2385 of No3 Training Squadron based at Shoreham. Crashed at or near the base³⁸². Part of a batch of 250 Camels that formed the first ever sub-contracted order for the type and was built by Ruston, Proctor & Company Limited³⁸³.

16 March 1918 – Sopwith Pup serial number C267 of No91 Squadron based at Tangmere, made a loop and then fell into a roll before spinning into the ground, killing the pilot³⁸⁴. This aeroplane was part of another batch of 350 Pups built by The Standard Motor Company Limited of Coventry³⁸⁵.

7 April 1918 – Sopwith Pup B5269 and Avro 504A B986 of No92 Squadron based at Tangmere collided, killing both pilots³⁸⁶. The Sopwith Pup was one of 150 built by Whitehead Aircraft Company Limited of Richmond, Surrey³⁸⁷. The Avro 504A was part of a batch of 100 built at the A V Roe & Company Limited factory at Manchester³⁸⁸.

27 May 1918 – Sopwith Pup serial number B5360 of No91 Squadron based at Tangmere. The pilot (possibly American national Lieutenant Alfred Wyman of No91 Squadron RAF buried at Chichester Cemetery³⁸⁹) fainted whilst in flight and fatally collided with the ground³⁹⁰. This aeroplane was part of the same batch as Sopwith Pup B5269 above³⁹¹.

7 July 1918 – Sopwith Pup C272 of No91 Squadron of Tangmere collided with Avro 504K E1663 at or near the base³⁹². The Sopwith Pup was part of the same batch of deliveries as the Pup involved in the fatal crash at

Tangmere on 16 March 1918³⁹³. The Avro 504K was one of 300 delivered by the A V Roe & Company Limited factory at Manchester³⁹⁴.

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GY/PH 538 Photograph of a Royal Naval Air Service Airship over Bognor
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