

1: Zeppelin demonstrates airship - HISTORY

During World War I the German military made extensive use of Zeppelins as bombers and scouts, killing over people in bombing raids in Britain. [4] The defeat of Germany in temporarily slowed down the airship business.

In the first month of the war Germany formed the "Ostend Carrier Pigeon Detachment", a cover name for an aeroplane unit to be used for the bombing of the English Channel ports. During the opening months of the war a German pilot flying a Taube regularly dropped bombs on Paris. The first raid consisted of five small bombs and a note demanding the immediate surrender of Paris and the French nation. Before the stabilisation of the Western Front, German aircraft made a number of raids on Paris, slightly damaging Notre Dame Cathedral. German press reports mention a raid carried out on 27 October, but there is no British record of any incident on this date. The first confirmed raid occurred on 21 December, when a Friedrichshafen FF. These raids, usually carried out by one or two aircraft during daytime, continued throughout the war, with little effect. Campaign against Britain[edit] British recruiting poster from Advertisement by the Daily Mail for its Zeppelin fund. Following an attempt on 13 January which was abandoned because of the weather, the first successful raid took place on the night of 19–20 January. Four people were killed and 16 injured. The first was made on 26 February but turned back due to headwinds: On 20 March the three remaining Army airships set off to bomb Paris; one was lost on the return journey. Two Navy raids failed due to bad weather on 14 and 15 April, and it was decided to delay further attempts until the more capable P-class Zeppelins were in service. London police were warned of an incoming raid around. Fifteen defensive sorties were flown against the raiders, only one of whom managed to make visual contact with the enemy. No ground-based guns fired and no searchlights found the airship; one pilot was killed when attempting to land. Warneford was awarded the Victoria Cross for his achievement. As a further consequence of the raid both the Army and Navy Zeppelins withdrew from their bases in Belgium: The Navy resumed raids on Britain in August. Despite eight attacks by RNAS aircraft the airship was towed into Ostend where it was later dismantled. Lawrence described the raid in a letter to Lady Ottoline Morrell: Then there was flashes near the ground and the shaking noise. It was like Milton then there was war in heaven. I cannot get over it, that the moon is not Queen of the sky by night, and the stars the lesser lights. It seems the Zeppelin is in the zenith of the night, golden like a moon, having taken control of the sky; and the bursting shells are the lesser lights. Three Zeppelins were directed against London and one against the benzol plant at Skinningrove. This exploded on Bartholomew Close near Smithfield Market, destroying several houses and killing two men. Mathy then turned east, dropping his remaining bombs on Liverpool Street station. The Zeppelin was repeatedly caught by searchlights and all 26 anti-aircraft guns in London were active, but every shell exploded too low and the falling shrapnel caused both damage and alarm on the ground. Three aircraft were in the air. None even saw the Zeppelin; one crashed on landing, killing the pilot. The raid killed 22 people and injured. Arriving over the Norfolk coast around. These new gun sites proved ineffective, although the airship commanders commented on the improved defences of the city. Further bombs were dropped on Holborn: In total, 71 people were killed and injured. There were a total 20 raids in, in which 37 tons of bombs were dropped, killing people and injuring. Improved defensive measures made raids more hazardous, and several airships were destroyed. By mid, there were anti-aircraft guns and searchlights across England, and the introduction of an effective combination of explosive and incendiary bullets gave the defending aircraft their first successes. New types of Zeppelin with improved ceilings restored the advantage, but led to further flying and navigation problems; oxygen was needed to fly at high altitude, the extreme cold led to crew fatigue and technical problems, and the meteorologists of the time did not appreciate the differing wind conditions likely to be met at altitude. Nevertheless, in twenty-three raids dropped tons of bombs, killing and injuring people. Initially the War Office believed that the Zeppelins used a layer of inert gas to protect themselves from incendiary bullets, and discouraged the use of such ammunition in favour of bombs. The initial trials of incendiary bullets in mid were unimpressive, and the explosive Pomeroy bullet attracted little official interest. However experiments undertaken in using a mixture of explosive and incendiary rounds were promising, and the use of this mixture of Pomeroy, Brock, and

Buckingham bullets brought the defending aircraft their first victories, using the technique of firing machine guns upwards at 45 degrees into the airship. The number of aircraft varied: Nine Zeppelins were sent to Liverpool on the night of 31 January – 1 February. A combination of poor weather, difficult navigation and mechanical problems scattered the aircraft across the Black Country hitting Tipton, Wednesbury and Walsall. A total of 61 people were reported killed and injured by the raid. Despite ground fog, 22 aircraft took off to find the Zeppelins but none succeeded. Six aircraft were damaged beyond repair and two pilots were killed when attempting to land. Ordnance Survey map of Airship raid 31 March-1 April on England Further raids were delayed by an extended period of poor weather and also by the withdrawal of the majority of Naval Zeppelins in an attempt to identify and resolve the recurrent mechanical failures. Raids resumed in March: It came down in the sea near Margate, all but one of the crew surviving. Most of the 48 killed in the raid were victims of a single bomb which fell on an Army billet in Cleethorpes. On the night of April a six-airship raid was made by Army and Navy airships, the Navy targeting the naval base at Rosyth and the Forth Bridge on the east coast of Scotland and the Army targeting London. The Zeppelin raid achieved very little; four turned back early and the rest wandered over a fog-shrouded landscape before giving up. Adverse weather dispersed two raids on 30 – 31 July and 2 – 3 August. On 8 – 9 August, two Zeppelins were part of a nine airship raid on Hull. A combination of rain and snowstorms scattered the airships while they were still over the North Sea. It dropped a few bombs over London Colney and South Mimms before it was picked up by a searchlight over Hornsey at about William Leefe Robinson flying from Suttons Farm. Robinson fired three drums of ammunition from his Lewis gun, one on each of three passes. After he emptied the third drum, the airship began burning from the stern and was quickly enveloped in flames. It fell to the ground near Cuffley, witnessed by the crews of four of the naval Zeppelins. There were no survivors. The German Navy remained aggressive, [44] and a Zeppelin raid was launched on 23 – 24 September. Forty-one bombs were then dropped in rapid succession over Streatham, killing seven and wounding More bombs were dropped on Brixton before crossing the river and dropping 10 bombs on Leyton, killing another eight people and injuring It dropped a few bombs on Sevenoaks and Swanley before crossing Purfleet at about The Zeppelin then came under anti-aircraft fire as it dropped bombs on Aveley and South Ockendon. Shortly thereafter, at He fired three drums of incendiaries and succeeded in starting a fire which quickly spread. The entire crew was killed, with some, including the commander Oberleutnant-zur-See Werner Peterson, choosing to jump rather than burn to death. Dropping bombs now to shed weight, a large number fell on homes in Botolph Road and Bow Road. As the airship headed towards Chelmsford it continued to lose height, coming under fire at Kelvedon Hatch and briefly exchanging fire with a B. The airship was set alight and the crew headed south before being arrested at Peldon by the police. Inspection of the wreckage provided the British with much information about the construction of Zeppelins, which was used in the design of the British Rclass airships. Eleven Zeppelins were launched at targets in the Midlands and at London. As the airship neared Cheshunt at about Three aircraft of No. His body was found near the wreckage, embedded some four inches in the ground. Tempest had had to dive out of the way of the stricken airship and, possibly suffering from anoxia, crashed without injury on landing. Nine Navy airships took part. Two airships were shot down by the defending aircraft: Ian Pyott flying a B. This was first achieved by lightening the existing craft, principally by removing one of the engines. Meanwhile, new types with a lightened hull framework were developed. In anticipation of the campaign, Kampfgeschwader der Obersten Heeresleitung 3 Kagohl 3, nicknamed the "England Geschwader", was formed, consisting of six Kampfstaffel Kastas under the command of Hauptmann Ernst Brandenburg. The first raid of took place on 16 – 17 March: The lack of success was repeated on 23 – 24 May, when six Zeppelins set out to bomb London but were frustrated by a combination of high winds and thick cloud. Two were forced to turn back over the North Sea due to mechanical difficulties and cloud over London caused the remaining bombers to divert to secondary targets at the Channel port of Folkestone and the nearby Shorncliffe Army Camp. The raid resulted in 95 deaths and injuries, mostly in Folkestone. In Shorncliffe, 18 soldiers 16 Canadian and two British were killed and 90 were wounded. Among the dead were 18 children, killed by a bomb falling on the Upper North Street School primary school in Poplar. In , Air Commodore Lionel Charlton described the raid as "the beginning of a new epoch in the history of warfare". On taking off for the return

journey, the engine of his aircraft failed, Brandenburg was severely injured and his pilot, Oberleutnant Freiherr von Trotha, was killed. A variety of the bombs used by the Germans As there had been little planning, early attempts to intercept the Gothas were ineffective. Large numbers of British aircraft were put into the air but were unable to climb high enough to engage the bombers. Captain James McCudden was part of the engaging force of 92 aircraft but due to the limited performance of his machine, had no success in intercepting the bombers.

World War I was shaped by the new vehicles developed during the four years of conflict. A century after the start of the war, we're looking back at the most remarkable vehicles—the planes.

Germany, Zeppelins Balloons had been used in wars prior to the First World War, notably by the Americans in the civil war and the French during the siege of Paris in 1870. This technology had been advanced by the development of dirigibles - cigar shaped airships with frames, containing many gas balloons. Powered with multiple engines, these craft could be flown in specific directions rather than just follow the direction of the wind. To this day his name remains synonymous with dirigibles in general. Airships of his design had already proven themselves capable of flying as far as England and back. This fact was not lost on the Allies, who from the very outset targeted the airship sheds. It was also not lost on the British public, where rumours and reported sightings of Zeppelins were frequent, though unfounded, throughout. At the outbreak of the war the German army had six operational dirigibles, and the navy had one. The army was quick to experiment with them - bombing Liege and Antwerp - despite the fact that at this stage no specially designed aerial bombs existed. Despite this the navy was very enthusiastic. They saw the Zeppelin as a solution to their reconnaissance problems. If the army traditionally used the cavalry for reconnaissance, the navy traditionally used the light cruiser. Germany had very few such ships, and an airship was viewed as being cheaper and less vulnerable. Under the command of Korvettenkapitan Peter Strasser the navy quickly acquired more airships. Throughout these were used for reconnaissance patrols over the North Sea, but the German Admiralty was pressing for permission to use them for attacks against England. The Kaiser, somewhat reluctantly, granted such permission and on the 19th of January the Germans carried out the first Zeppelin raid against Britain, killing two and injuring sixteen. This was the first of many raids, which continued at a rate of about two per month, in parallel with the continuing reconnaissance patrols. The German Admiralty was very enthusiastic about the results, and asked for permission to bomb London. This was only granted by the Kaiser after a series of raids by French bombers on German cities. On the 31st of May the first raid was carried out against London, killing seven and injuring thirty five. The most successful Zeppelin raid on London in the entire war was on the 8th of September. This raid caused more than half a million pounds of damage, almost all of it from the one Zeppelin, the L13, which managed to bomb central London. This single raid caused more than half the material damage caused by all the raids against Britain in 1917. When he spotted a Zeppelin returning from a bombing raid against London he decided to attack it. The airship began climbing, leaving the little plane behind, but Warneford, unbeknown to the Zeppelin crew, continued the pursuit, climbing slowly over two hours to an altitude of 13,000 feet. At this stage the airship began to descend in the direction of Brussels, and seizing his opportunity Warneford, now above the Zeppelin, dived towards it and from about two hundred feet above he dropped his six bombs on its roof. He was forced to put the plane down, behind enemy lines, but he managed to make sufficient emergency repairs to take off again and return to his base. LZ 37 was the first Zeppelin brought down by an airplane. He was killed ten days later in a flying accident. This was an isolated incident. Throughout the remainder of the war Zeppelins raided London frequently, and with impunity. They flew too high for most planes, and when they were intercepted by aircraft the ammunition in use at the time had little effect. Navigation was very primitive, and as the war progressed the British use of blackouts made it even harder. Bomb aiming was far from accurate. The psychological impact of these raids, however, was enough to cause the British to tie up 12 squadrons on home defence. The Germans also bombed Paris. The first raid was on 21st of March, when two Zeppelins caused 23 deaths and injured 100. Although the Zeppelins continued to raid Paris, London was actually a preferred and easier target. The nearest Zeppelin base to Paris was at Metz, which meant flying close to 100 miles over French territory each way, giving the defending airforce and anti-aircraft guns much more time to organize. Raids against London had to cover nearly twice the distance, but most of the approach was over friendly territory and the sea. Paris was also protected by barrage balloons, a measure only taken by the British later in the war. Four of them were lost carrying out bombing raids during the Battle of Verdun, and this marked the last use of airships for tactical bombing. But

Strasser remained confident. The Zeppelin factory was producing a new generation of airships - larger, more powerful, and with more engines. But it was also a year of change on the British side as well. Happily for them this coincided with the arrival of improved ammunition. Towards mid the British planes were armed with a mixture of explosive and incendiary bullets. This mixture would prove to be deadly to the airships: The incendiary bullets could set those leaks on fire, and once on fire a Zeppelin was doomed. William Leefe-Robinson, flying a BE2c, was the first to shoot down a dirigible over Britain, on the 2nd of September. The massive fire of the burning airship was visible for over a hundred miles. This was during a raid of twelve naval airships which were, somewhat unusually, accompanied by four army airships. Leefe-Robinson became an instant hero. He survived the war, only to die a month later in the influenza epidemic. Leefe-Robinson had shot down the SL Three weeks later he was to lose two airships, out of a total of twelve taking part in a raid. There were no comforting explanations. They were naval airships. They were the most up to date Zeppelins available. The L33 had been hit by anti aircraft fire. She did not catch fire, but she was forced to land in England. The crew all survived, and set her alight before capture. Nor were these the last losses in The German military was becoming disillusioned with the Zeppelins, and began using the new Gotha and Giant bombers to attack Britain, but Strasser remained convinced. The answer was to fly higher, above the defending aircraft. Thus was conceived the third generation of Zeppelins, the "Height Climbers", airships capable of reaching an altitude of 20, feet. In order to reach these heights defensive armaments were reduced, as was the strength of the frame. Flying at such altitudes produced a whole new set of problems. Bomb aiming and navigation became even harder. But with the renewed immunity the height seemed to offer, it seemed worth the price. Indeed, when on the night of October 19th a fleet of eleven Height-Climbers crossed the English coast they were too high to be heard, and their raid was a total surprise. But on the return journey, over the European mainland, almost half the airships were shot down by British and French fighter aircraft as they descended towards landing. The L55 had attempted to avoid this risk by keeping at 20, feet till it had cleared the western front, but this caused other problems. The morning sun heating the hydrogen forced the L55 to a record-breaking 24, feet. With most of the crew disabled by oxygen deprivation it was a struggle to bring her under almost partial control. The L55 crash landed in central Germany. The total amount of material damage caused by the airships in was less than 90, pounds. German manufacturing by this time had been greatly reduced, and they could not replenish such losses. On the 5th of August Strasser himself led the last big raid against Britain, leading a fleet of five Height-Climbers. Strasser was flying in L70 - his most advanced airship, capable, he hoped, of flying bombing missions against New York. But by this time the British had aircraft that could operate at about 20, feet as well, and L70 succumbed to a two man DH4 piloted by Egbert Cadbury. He was a member of the famous chocolate manufacturing family. The fatal shots were fired by his gunner, Robert Leckie, whose hands were almost frozen because he had not had time to put on gloves when he and Cadbury had scrambled to chase the Zeppelins. The rest of the airships dropped their bombs on what they thought were "targets of opportunity", but in fact they dropped them in the sea. The Zeppelin attacks had a profound psychological impact on the Allies. The Germans were ordered, under the treaty of Versailles, to hand over all their airships, but their crews preferred to destroy as many of them as they could. Of the Zeppelins employed by the Germans, 53 were destroyed and a further 24 were too damaged to be operational. The cost of constructing those Zeppelins was approximately five times the cost of the damage they inflicted.

3: Zeppelins of World War I: The Dramatic Story of Germany's Lethal Airships by Wilbur Cross

I suppose this being the centenary of the First World War, a lot of attention is being paid to it, and thusly I am soaking it in. The more I learn about World War I the more I am utterly amazed at the first war in the industrial age.

Visit Website London home damaged by World War I German zeppelin raids Germany hoped that the bombing of Britain would spark such fear that it would force the country out of the war. A quarter-million cows were needed to build one zeppelin. After the initial strike on London in May, zeppelins continued to hit the city with impunity, timing raids to coincide with good weather and moonless nights. On September 8, 1915, the shadow of a sleek cigar-shaped zeppelin passed over the dome of St. Paul's Cathedral. The attack caused massive damage and killed 22 civilians, including six children. The zeppelin raid would be the worst of the war on London. Anti-aircraft defenses were diverted from the front lines in France and positioned around the capital. Authorities drained the lake in St. Paul's. Zeppelin shot down near Colchester, England in The new defenses were in place on September 2, 1915, when the Germans launched their largest raid of the war with a fleet of 16 airships heading to London. The searchlights scouring the skies caught one of the silver zeppelins sparkling in their beams, and Royal Flying Corps pilot William Leefe Robinson soared over 11,000 feet and closed in upon his prey. He raked the zeppelin with bullets that punctured the leviathan like harpoons. Suddenly, the mighty airship ignited like a torch, and the fireball fell from the sky like a shooting star that could be seen for miles around. Londoners cheered and sang patriotic tunes as the incinerated zeppelin plummeted to earth. The tide had been turned. Other British pilots achieved similar successes in shooting down airships. Strasser ordered his fleet to fly at higher altitudes, but crews began to suffer from the frigid temperatures and became incapacitated from oxygen deprivation. The zeppelin raids on London continued, but far less frequently, and by Germany began to deploy heavy biplane bombers in their stead. Over the course of the war, German zeppelins staged more than 50 attacks on Britain, but at a heavy price with 77 of their craft either shot down or disabled. The German zeppelin raids on London killed nearly 1,000 and seriously injured almost 2,000, but the casualties did not include the ultimate German aim of breaking British morale. The waging of total war against civilian populations, however, did not fade with the zeppelin era.

4: Zeppelin - Wikipedia

Terrorizing the populace of London was one result of the Zeppelin bombing, that is covered along with damage caused by the Zeppelins and their effect on the outcome of the war. Finally, continued postwar development of the Zeppelin is covered to some extent.

They were Zeppelins, enormous airships, some the length of two football fields. With a team of engineers, explosives experts, and historians, NOVA investigates the secrets behind these deadly war machines. Why were these German monsters of the sky, filled with highly flammable hydrogen gas, so difficult to shoot down? How were their massive gas bags pieced together from the intestines of millions of cows? Experts reconstruct and detonate deadly WWI incendiary bombs and test fire antique flaming bullets, all to discover how the British came up with the unique artillery that would finally take down the biggest flying machines ever made. Eighteen months into World War I, the Germans devastate British cities with enormous airship bombers, called "zeppelins. The Germans are here. In a game-changing strategy, the Germans ruthlessly bomb ordinary civilians, from the air. Very much so, yeah. But exactly how these mighty machines worked has been lost to history. Now, engineer Hugh Hunt will investigate the incredible technology behind these gas-filled monsters. They were just there, surelyâ€boom. Hugh will discover an unexpected personal connection to the events. What we have here is the bullet your uncle designed. And he will unravel an amazing story of ingenuity and courage. Good on you, Uncle Jim. As the city of London sleeps, German commanders miles away are planning a deadly attack. They strike at the enemy in their own backyard. For the first time in history, London is under attack from the air. The Germans have deployed a terrifying new weapon of mass destruction: For the next two and a half years, these mighty airships rain down death on British streets, claiming the lives of hundreds of innocent civilians. How did the Germans construct these colossal machines? What was the secret of their lethal success? And why were they so difficult to destroy? It is the latest in a long line of airships, going back years, that have carried passengers on scenic pleasure cruises. Taking his seat in the gondola is Cambridge University engineer, Dr. But today, he is taking a trip into the past, to discover how the Germans built the zeppelin bombers of World War I and how the British strove to bring them down. Hugh was expecting the airship to be slow and cumbersome, but this one is full of surprises. Are zeppelins are noted at all for maneuverability, or is it that generally airships are maneuverable? Yes; as you can see. This machine can reach a top speed of 78 miles per hour and stay in the air for 24 hours. And its predecessors of a century ago were almost as fast, just as far-ranging and over twice as big. On July 2, , three years before the first airplane flew, a retired German soldier called Count Ferdinand von Zeppelin unveiled his own revolutionary flying machine. He produced a fleet of these airships and fitted them out like luxury liners. They carried well-heeled passengers on grand excursions over the Alps. But with Germany on the brink of war with Britain, the military had other plans for the airships. They would make perfect long-range bombers to strike at the enemy in their own backyard. Bombing London would cause panic in the civilian population and force the British government to pull out of the war. The brains behind the zeppelin bombing campaign was navy commander Peter Strasser. Be prepared to make the supreme sacrifice for your Fatherland; crowning glory for any loyal son of Germany. Among the experts is military historian Professor Eric Grove. Strasser was one of that group of officers of the armed forces who actually came into airships and caught the bug. He suddenly became a convert. It was road-to-Damascus conversion, and this new technology was going to win the war. War had broken out on August 4, Initially, World War I looked like it might be over by Christmas, but it degenerated into a long, bloody war of attrition that would claim the lives of over million people. Strasser believed he could bring a swift end to the carnage on the battlefield by bombing civilian targets, like London, into submission. The weapon that would deliver victory was the new zeppelin bomber. The zeppelin raids demonstrated what 20th century war was going to be all about, where the war is carried into the heart of the enemy territory, and you rationalize it by saying the more frightful you are, the sooner the war will end, the sooner the enemy will give in. The technology Strasser pinned his faith on employed the latest lightweight materials. Unlike a blimp, which relies on the pressure of the gas inside to keep its shape, the zeppelin had a

rigid aluminum alloy skeleton. At feet, it was more than twice as long as a jumbo jet. Beneath its canvas skin, it contained 19 bags filled with hydrogen gas. Hydrogen is lighter than air and provided lift to the airship, but molecules of hydrogen are so small that they pass easily through the weave of most fabrics. Stopping the gas from leaking was one of the major challenges facing the zeppelin engineers. Leaking hydrogen gas was blamed for the notorious Hindenburg disaster of 1937, when the highly flammable gas caught fire and destroyed the giant airship at Lakehurst, New Jersey. Of the 97 people on board, 35 perished. The helium is held in an envelope made of laminated plastic, but stopping the gas from leaking is still a problem. We average somewhere from 10 to 15 cubic meters a day of natural loss. Is it through sort of pinprick holes in the envelope or is it just through the fabric, or where is it leaking from? Most of it, most of the helium, it could be pinprick holes that occur over a period of time—very, very difficult to completely seal it. What about in the early days? To make the leak-proof bags that held the hydrogen, the airship pioneers needed a material that was light and strong and in plentiful supply. They found it in an unlikely place: One of the things that I found so fascinating is the story of what these bags are made of. And they were made of this stuff, which, well, you look at this and you kind of think, "Well, is it paper? At this processing plant in Middlesbrough, England, animal intestines arrive by the barrel-load from the slaughterhouse. Incredibly, this stuff was the raw material for zeppelins. These intestines are used to make sausage skins, just as they were in Germany during the First World War. Today, the guts are processed on an industrial scale, as factory owner John Weschenfelder explains. The final machine is what we call the finishing machine. Hugh wants to find out how narrow tubes can be turned into enormous balloons. And that is what we make balloons out of? Sensibly, the zeppelin builders started with the biggest piece of cow gut they could find. This is the appendix. It has some very special properties. Somehow, the German zeppelin builders stumbled across the technique for joining the membranes together using nothing more than water. Using this magical process, the Germans were able to piece together their gigantic gasbags from small strips of cow gut. What we need to do now is leave that to dry. So we did one, and after two hours, this is what we found. Just the moisture has bonded it together. But I want to understand why. To find out, Hugh takes the sample back to Cambridge University and asks his colleague, collagen expert Michelle Oyen. They take a close look at the overlapping joint under a scanning electron microscope. The entwined fibers bind the two sheets of collagen together. When the collagen is wet, the fibers at the interface slide across one another without sticking, but as they dry out, they become tacky and adhere to one another. Our ancestors were very crafty in the fact that they figured out how to use this natural polymer for other uses. The material was so precious to the war effort that, for a time, sausage-making in Germany was verboten. By January, 1915, the Germans had assembled a fleet of 13 zeppelin bombers. At last, Commander Strasser had the firepower to launch his terror campaign. He chose targets within easy reach of Germany. One was the seaside resort of Great Yarmouth, in Norfolk. Here is where German bombs first fell on Britain, and this street is where the first civilians died. The next morning, sleepy towns along the coast awoke to find the war on their doorstep and bodies among the rubble. For the Germans, this was just the start. And he thought that they could inflict so much damage that British morale would crack. The city Strasser prized above all others was London. For the next four months, the Germans launched raid after raid, feeling their way towards the capital. Then, finally, on May 31, 1915, a lone zeppelin made it.

5: Strategic Bombing Started In World War I - From Zeppelins

During World War I, Zeppelins were commonly used by Germany, a part of the Central Powers which included Austria-Hungary, Bulgaria, and the Ottoman Empire. The Allies, which included Serbia, Russia, France, Italy, Belgium, the United Kingdom, and the United States, tried to use airships, but were not very successful in their attempt.

February 27, By: Madison Trent On May 6, , the great airship, known as the Hindenburg, suddenly erupted into flames and in thirty two seconds was gone. On this disastrous day, thirty five people of ninety seven passengers died and the age of the airship was brought to an end. Before their use for entertainment, airships were once used as a weapon in World War I. They had a more fearsome name called Zeppelins. Zeppelins, unlike blimps, are made with a rigid framework that maintains their shape. Early twentieth century airships were filled with hydrogen gas, which is very flammable and is why the Hindenburg evaporated so quickly. Now the airships use helium, which still gives them the airlift, but is not as dangerous. Airships, Dirigibles, Zeppelins, and Blimps: They also had to create an aerodynamic shape to maintain speed faster than a crawl. His first airship the Luftschiff Zeppelin 1, was not perfect, but sparked interest in the people. The assassination set off a chain of events that led to the start of World War I on July 28, and would end four years later. Navy with the task of developing and acquiring rigid airships. Nothing new was developed, but the U. Army ended up using French observation balloons. These balloons did not have any motor, so they were only directed by the wind and needed to be tethered down when on the ground. With military deadlock on the western front, Germany decided to use the airships against towns and cities in Britain. They both carried thirty hours worth of fuel, eight bombs, and twenty-five incendiary devices, which were used to cause fires. The German pilots had been given permission to attack military and industrial buildings, but Emperor Wilhelm II forbid attack on London for fear of injuring a member of the Royal family, to whom he was related. The zeppelins crossed the coastline around eight thirty at night and split off in different directions with L3 heading north, and L4 heading south. The propaganda value grew enormously. The commander in charge of the German fleet, Reinhard Scheer was anxious to provoke the Royal Navy and using surface ships, submarines, and airships in a combined operation, he attacked Leith and the city of Edinburgh. The police were assembled, along with the Red Cross, and fire stations. Traffic was stopped, and the Electric Lights Department lowered all lights. The airship, L14, was headed towards Rosyth and the Forth Railway Bridge, but was unable to see its targets, so it dropped bombs over Leith and the center of Edinburgh while the L22 bombed the south side of the city. That night twenty-three bombs were dropped by the L14 and L22, killing thirteen people and injuring twenty-four. After identifying the airship, he lost it in the clouds. Later, when it came into contact again, he tried two methods for attacking, neither of which worked. With the remaining ammunition he had left, his third attempt was a success. His action marked a permanent change in the war and later combat techniques like his were used to shoot down more airships. Robinson was awarded the Victoria Cross, the highest award for gallantry in the face of the enemy for British and Commonwealth forces for his action. In command of the L31 was thirty-three year old airship ace Heinrich Mathy, a master navigator and aerial tactician, who was a veteran of numerous raids and also became known for his daring and cool determination. The L31 was one of a new generation of super-Zeppelins that was designed to overpower the growing British air-defences. The mood on this airship though was a somber one. Just the week before, on the night of September 23, two of the new super-Zeppelins were shot down. The crew of men, most of which were volunteers, slept uneasily with bad dreams of falling airships. The crew even noticed a change in Mathy, who seemed more serious with sharp graven features in his face. Despite the danger, Mathy remained determined to penetrate the enemy air-defences and bomb the capital. He had planned to head south-west toward London, but searchlights caused him to turn northwards. In an attempt to cross the northern gun defences, he shut off his engines, hoping to glide silently with the wind. When he restarted the engines, bursts of lights and guns from the L31 illuminated the sky and attracted the attention of fighter pilots circling the capital. In an effort to save itself, the airship began climbing in altitude, but was not fast enough. Second Lieutenant Wulfstan Tempest closed the gap with his BE2c fighter and dived toward the airship, which was twenty-five times bigger. Lieutenant Tempest only

nearly escaped the burning ball of fire. Everyone of the crew was killed. The night of October 1, brought on spontaneous cheering and applause from the streets below, because three of the new super-Zeppelins had been shot down. They developed useful precautions to protect themselves that would later be of great help during deadlier air raids in World War II. The zeppelins had other uses in World War I. They were used for surveillance by both sides and could reveal submarines nearly invisible from ships, but easily seen from the air. They were also very useful for fleet maneuvers and would carry equipment and information to commanders on the ground. This was something ordinary airplanes could not do. The Zeppelins remained popular after the war and were still being developed and improved until the Hindenburg disaster in That catastrophe was seen by millions of viewers all over the world and would help end the interest in airships limiting them to the promotional flying and communication transport for the military they do today. Now when people look up in awe by blimps flying overhead they can think about how much bigger of a story is behind its history and they will be ever more amazed at the sight.

6: Fusfoo - Zeppelins in World War I

In the early months of World War I, the German military employed their airships, which were capable of traveling 85 miles per hour and hauling two tons of explosives, on bombing raids on the.

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The pink ovals depict hydrogen cells inside the LZ , the magenta elements are Blaugas cells. The full-resolution picture labels more internals. The framework of most Zeppelins was made of duralumin a combination of aluminum and copper as well as two or three other metalsâ€™ its exact content was kept a secret for years. They were propelled by several engines , mounted in gondolas or engine cars, which were attached to the outside of the structural framework. Some of these could provide reverse thrust for manoeuvring while mooring. Early models had a comparatively small externally mounted gondola for passengers and crew which was attached to the bottom of the frame. This space was never heated fire outside of the kitchen was considered too risky so passengers during trips across the North Atlantic or Siberia were forced to bundle themselves in blankets and furs to keep warm and were often miserable with the cold. By the time of the Hindenburg, several important changes had taken place: The flight ceiling was so low that no pressurization of the cabins was necessary, though the Hindenburg did maintain a pressurized air-locked smoking room no flame allowed, howeverâ€™ one electric lighter was maintained permanently inside the room. The Hindenburg also had passenger gangways that led from the ground directly into its hull and which could then be withdrawn entirely, ground access to the gondola and an exterior access hatch via its electrical room; this was intended for crew use only. Convinced of the potential importance of aviation, he started working on various designs in , and had completed detailed designs by An official committee reviewed his plans in , [2] and he received a patent, granted on 31 August , [12] with Theodor Kober producing the technical drawings. The front section, containing the crew and engines, was Zeppelin also sought support from the industrialist Carl Berg , then engaged in construction work on the second airship design of David Schwarz. The intention behind the floating hall was to facilitate the difficult task of bringing the airship out of the hall, as it could easily be aligned with the wind. Despite this performance, the shareholders declined to invest more money, and so the company was liquidated, with Count von Zeppelin purchasing the ship and equipment. The Count wished to continue experimenting, but he eventually dismantled the ship in This renewed the interest of the German military, but a condition of purchase of an airship was a hour endurance trial. During the stop, a storm tore the airship away from its moorings on the afternoon of 5 August It crashed into a tree, caught fire, and quickly burnt out. No one was seriously injured. The airship remained on the ground until the following day, permitting a detailed examination by French airship experts. The airships did not provide a scheduled service between cities, but generally operated pleasure cruises, carrying twenty passengers. The airships were given names in addition to their production numbers. On 28 June it set off on a voyage to publicise Zeppelins, carrying 19 journalists as passengers. A combination of adverse weather and engine failure brought it down at Mount Limberg near Bad Iburg in Lower Saxony, its hull getting stuck in trees. All passengers and crew were unhurt, except for one crew member who broke his leg when he jumped from the craft. By the outbreak of World War I in August flights had carried 10, fare-paying passengers. On 18 January Admiral Alfred von Tirpitz , Secretary of State of the German Imperial Naval Office, obtained the agreement of Kaiser Wilhelm II to a five-year program of expansion of German naval-airship strength, involving the building of two airship bases and constructing a fleet of ten airships. The Navy was left with three partially trained crews. During the war the Navy Zeppelins were mainly used in reconnaissance missions. Early offensive operations by Army airships revealed that they were extremely vulnerable to ground fire unless flown at high altitude, and several were lost. No bombs had been developed, and the early raids dropped artillery shells instead. Flying at a relatively low altitude because of cloud cover, the airship was damaged by small-arms fire and was destroyed in a forced landing near Bonn. Zeppelins attacking Paris had to first fly over the system of forts between the front and the city, from which they were subjected to antiaircraft

fire with reduced risk of collateral damage. The French also maintained a continuous patrol of two fighters over Paris at an altitude from which they could promptly attack arriving zeppelins avoiding the delay required to reach the zeppelin altitude. The crew survived but were taken prisoner. At the instigation of the Kaiser a plan was made to bomb Saint Petersburg in December. Two Navy zeppelins were transferred to Wainoden on the Courland Peninsula. A preliminary attempt to bomb Reval on 28 December ended in failure caused by operating problems due to the extreme cold, and one of the airships was destroyed in a forced landing at Serappen. The plan was subsequently abandoned. It was then used for reconnaissance and bombing missions in the eastern Mediterranean. It flew one bombing mission against Naples on 10th 11 March. A planned attack on Suez was turned back by high winds, and on 7 April it was on a mission to bomb the British naval base at Malta when it caught fire over the Straits of Otranto, with the loss of all its crew. Patrolling had priority over any other airship activity. The German Navy had some 15 Zeppelins in commission by the end of and was able to have two or more patrolling continuously at any one time. However their operations were limited by weather conditions. In April the first Curtiss H. Leckie which had been alerted following interception of its radio traffic. Smart succeeded in shooting the Zeppelin down in flames. German strategic bombing during World War I British First World War poster of a Zeppelin above London at night At the beginning of the conflict the German command had high hopes for the airships, which were considerably more capable than contemporary light fixed-wing machines: Contrary to expectation, it was not easy to ignite the hydrogen using standard bullets and shrapnel. These raids were followed by the Cuxhaven Raid on Christmas Day, one of the first operations carried out by ship-launched aeroplanes. Airship raids on Great Britain were approved by the Kaiser on 7 January, although he excluded London as a target and further demanded that no attacks be made on historic buildings. The airships relied largely on dead reckoning, supplemented by a radio direction-finding system of limited accuracy. After blackouts became widespread, many bombs fell at random on uninhabited countryside. Two Navy raids failed due to bad weather on 14 and 15 April, and it was decided to delay further attempts until the more capable P class Zeppelins were in service. In total some bombs were dropped on a line stretching from Stoke Newington south to Stepney and then north toward Leytonstone. Seven people were killed and 35 injured. Aware of the problems that the Germans were experiencing in navigation, this raid caused the government to issue a D notice prohibiting the press from reporting anything about raids that was not mentioned in official statements. Only one of the 15 defensive sorties managed to make visual contact with the enemy, and one of the pilots, Flt Lieut D. Barnes, was killed on attempting to land. Warneford, who dropped six bombs on the airship, setting it on fire. All but one of the crew died. Warneford was awarded the Victoria Cross for his achievement. The Navy resumed raids on Britain in August, when three largely ineffective raids were carried out. Mistaking the reservoirs of the Lea Valley for the Thames, it dropped its bombs on Walthamstow and Leytonstone. One Zeppelin targeted the benzol plant at Skinningrove and three set off to bomb London: This exploded near Smithfield Market, destroying several houses and killing two men. Mathy then turned east, dropping his remaining bombs on Liverpool Street station. The Zeppelin was the target of concentrated anti-aircraft fire, but no hits were scored and the falling shrapnel caused both damage and alarm on the ground. The raid killed 22 people and injured. None of the other Zeppelins reached central London: A total of 71 people were killed and injured. Although these raids had no significant military impact, the psychological effect was considerable. Lawrence described one raid in a letter to Lady Ottoline Morrell: Then there was flashes near the ground and the shaking noise. It was like Milton then there was war in heaven. I cannot get over it, that the moon is not Queen of the sky by night, and the stars the lesser lights. It seems the Zeppelin is in the zenith of the night, golden like a moon, having taken control of the sky; and the bursting shells are the lesser lights. Searchlights were introduced, initially manned by police. By mid, there were anti-aircraft guns and searchlights across England. Initially the War Office had believed that the Zeppelins used a layer of inert gas to protect themselves from incendiary bullets, and favoured the use of bombs or devices like the Ranken dart. However, by mid an effective mixture of explosive, tracer and incendiary rounds had been developed. There were 23 airship raids in, in which tons of bombs were dropped, killing people and injuring. Nine Zeppelins were sent to Liverpool on the night of 31 Januaryth 1 February. A combination of poor weather and mechanical problems scattered them across the

Midlands and several towns were bombed. A total of 61 people were reported killed and injured by the raid. Ten airships set off on 31 March: Most of the 48 killed in the raid were victims of a single bomb which fell on an Army billet in Cleethorpes. The Zeppelin raid achieved very little; four turned back early and the rest wandered over a fog-covered landscape before giving up. These had become available by September. A combination of rain and snowstorms scattered the airships while they were still over the North Sea. Only one of the naval airships came within seven miles of central London, and both damage and casualties were slight. William Leefe Robinson, who fired three round drums of Brocks and Buckingham ammunition into the airship. The third drum started a fire and the airship was quickly enveloped in flames.

7: Zeppelins of World War One by Jack Greenlee on Prezi

World War One On the morning of January 19th two German Zeppelin airships, the L3 and L4 took off from Fuhlsbüttel in Germany. Both airships carried 30 hours of fuel, 8 bombs and 25 incendiary devices.

Facebook Twitter I suppose this being the centenary of the First World War, a lot of attention is being paid to it, and thusly I am soaking it in. The more I learn about World War I the more I am utterly amazed at the first war in the industrial age. I was surprised to discover that the Germans did a fairly good job of strategic bombing beginning in 1914. Yes, Zeppelins were used to drop bombs on London and targets in other fronts. Beginning in 1914, German airships operated by the German Navy and Army were enlisted and equipped to carry bigger payloads, fly at higher altitudes and put ordinance in the center of London. The weather over London and the iffy flying conditions made accuracy a novelty in this enterprise of dropping bombs on targets by eyeball from thousands of feet in the air in a balloon that is essentially drifting over the target. The drama of bomb exploding in London, followed by fatal misses that nonetheless struck random targets on the outskirts rattled British citizens. No, now the war was on the front porch. Of course those who suffer the most in a war are the citizens. The end of the strategic bombing would not come until the end of the war years later. British citizens would have to bear up under the unsettling sudden and haphazard death. These killed and injured another 1,000 people. Royal Air Force Factory BE 2s shot down a few of the lumbering floating gun platforms and some Zeppelin gunners scored on pursuing British fighters. Batteries of ground-based artillery took down Zeppelins around London and along the coasts. For the most part, Zeppelins flew higher than the early fighter aircraft could climb. When fighters shot down Zeppelins it was an extreme shot and a lucky hit or a Zeppelin that lost altitude and fell into fighter territory. Zeppelins are differentiated from Blimps by a structure inside them that give stem their shape. That said, they were seemingly impervious to gunfire in the early part of the war. That came late but they certainly turned the tide back against the airships gliding in from Europe. Zeppelin bomb, on display at the National Museum of Flight. Zeppelins were dangerous machines that could catch fire leaving the crew with only the option to decide which way they want to die: V bomber The German Gotha Bomber was the first successful intercontinental strategic bomber. On May 25th, the strategic bombing grew even more terrifying. Twenty-three Gotha heavy bombers crossed the North Atlantic in the middle of the day and bombed London. It caused about 1,000 wounded casualties and it killed 95 people, including Canadian and British soldiers. Pursuing Sopwith Pups shot one down. A follow-up daylight raid on June 5th caused deaths and over injured. There were six more daylight raids in massed formations to come. Only of these beasts were built and applied in what was essentially a terror role in World War I. The actual damage the bombings cause was negligible. The terror was palpable.

8: German strategic bombing during World War I - Wikipedia

Before the 20th Century, civilians in Britain were largely unaffected by war, but this was to change on 19 January with the first air attacks of World War One by the German Zeppelin.

9: Zeppelins of World War I : Peninsula Library & Historical Society

The War in the Air - Bombers: Germany, Zeppelins Balloons had been used in wars prior to the First World War, notably by the Americans in the civil war and the French during the siege of Paris in

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