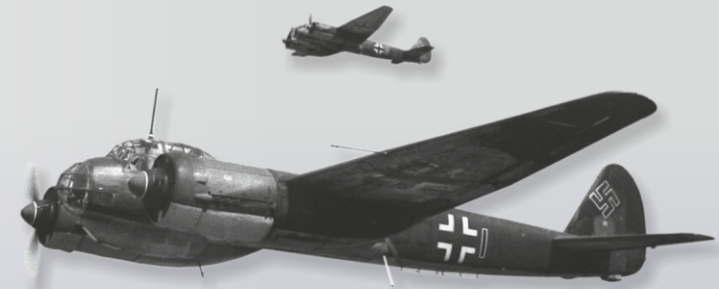




**DP WORLD**  
London Gateway

## Archaeology from the Sky

### The Air War over the Thames Estuary



- Sites in this booklet investigated for The Port
- Flight path of *Luftwaffe* Junkers 88
- Flight path of two RAF Spitfires
- Navigational Channel for London Gateway Port



From Schipol

Harwich

Colchester

Clacton

310° bearing

10 miles  
W of Clacton

Chelmsford

From RAF North Weald

10 miles  
SE of Clacton

Battle site

Wreck site





## Our Commitment to Responsible Growth



The discovery of the remains of a crashed Junkers 88 aircraft in the outer Thames Estuary during dredging for the DP World London Gateway project was both unexpected and

exciting. The seabed off the south and east coasts of England contains one of the highest concentrations of crashed aircraft in the world. It is particularly rich in military aircraft, as a result of the pivotal role that air power played in the Second World War. However we know where only a few of these crashed aircraft are and it can be difficult to identify crash sites when they are found. Crash sites offer tangible evidence of air battles and raids; they also have the ability to offer information and a means of understanding the past in ways that are not available from other sources. This was spectacularly the case with this crash site. Finds recovered showed that the aircraft concerned was a T series Ju 88. This aircraft was only produced in very limited numbers and only one is known to have crashed in UK waters.



As the only extant example of this rare Ju 88 prototype, the aircraft represents an important part of the estuary's marine and military heritage. As a result of the work undertaken by Wessex Archaeology, the aircraft vividly illustrates a past, which although relatively recent, is now fading from memory. In a single episode the crash site intertwines the stories of secretive *Luftwaffe* units, the contribution of allied nations to RAF units, decorated fighter aces and veteran test pilots.

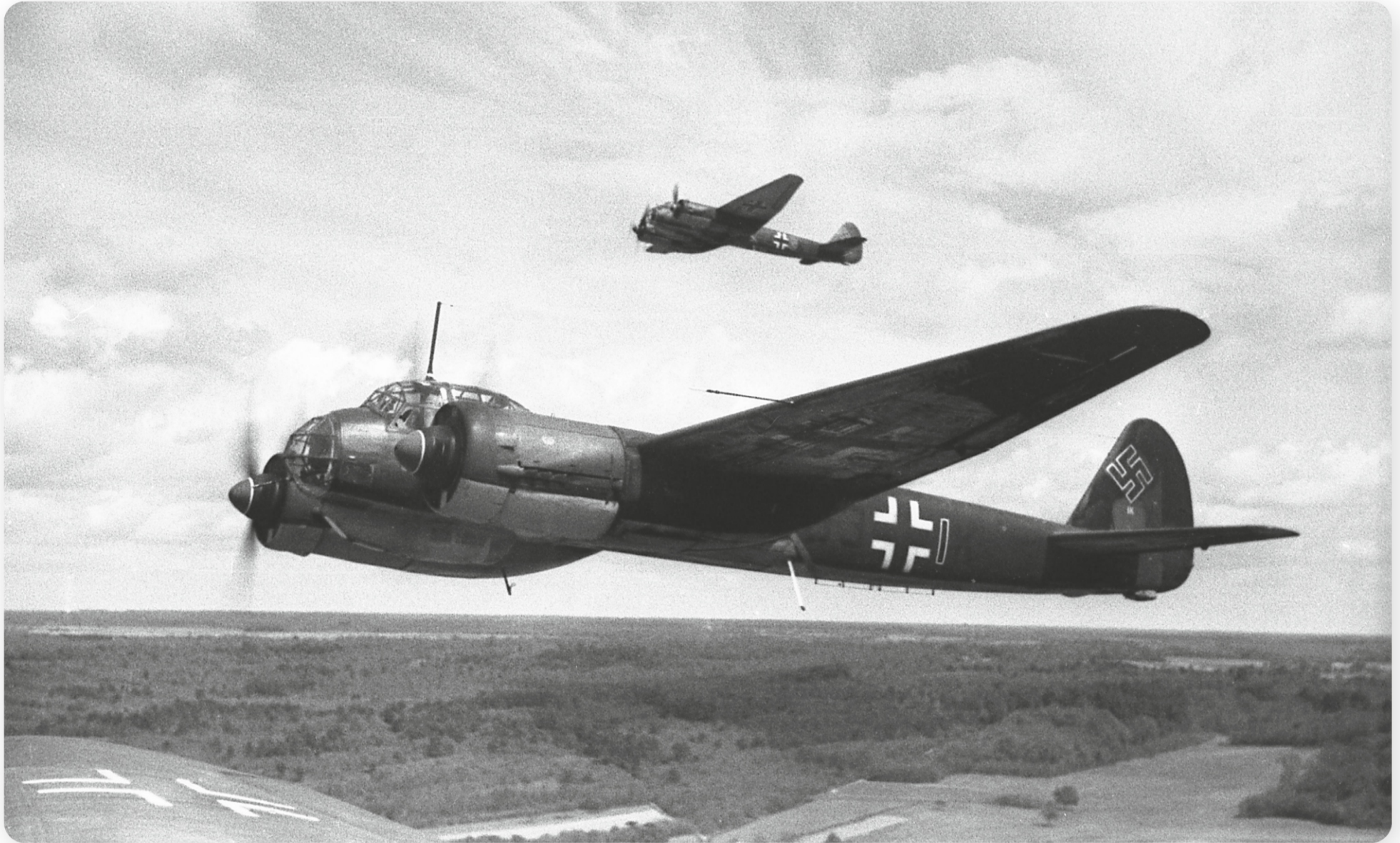
We hope that the study and publication of this crash site will make a significant contribution to the history of military warfare in the region during the twentieth century and will be a fitting memorial to all those connected with the aircraft and its final flight.

A handwritten signature in blue ink, appearing to read 'M Pearson'.

Marcus Pearson  
Environmental Manager







Junkers 88 aircraft in flight (BArch Bild 1011-409-0885-30A / Kahler 1940/1941)





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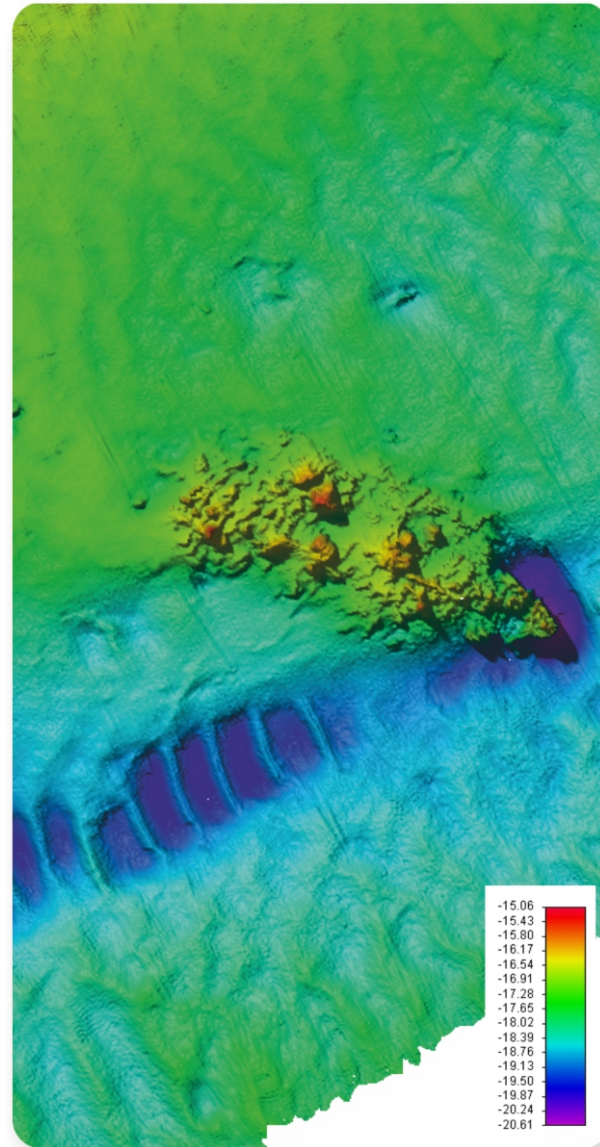


## DP World London Gateway Port and Archaeology

DP World London Gateway have recently completed one of the largest dredging projects ever planned in the UK to widen, deepen and in places re-route the existing commercial shipping channel in the Thames Estuary. Given the high level of archaeological potential on the seabed of the estuary, every phase of this process has been designed to minimise impact on our submerged heritage.

Deepening the channel is essential to accommodate the very large container vessels that will be introduced into service in the next few years. These vessels are longer, wider and have deeper draughts than those that currently serve the Port of London. New port facilities are also under construction and material that has been dredged from the estuary has been used to reclaim the land that these will stand on.

In support of planning consent, DP World London Gateway has conducted extensive work to mitigate the impact that the port and channel dredge will have on the archaeology of the estuary. At sea this has involved an extensive search for archaeological sites likely to be affected by the dredging. All potential sites



were investigated by geophysicists and divers from Wessex Archaeology, supported by the Port of London Authority.

Sites found included historic wrecks dating back to the 17th century, evidence of crashed aircraft and defensive structures relating to the First and Second World Wars. Where possible the dredged channel was routed around known sites of archaeological potential and most of the sites identified remain intact on the seabed. For a few sites this was not possible and the archaeological material was recorded *in situ*, lifted under supervision and stored whilst appropriate museum collections are found for their long-term care.

*London Gateway: A Maritime History* published in 2010 explores many of these sites.

Left: Multibeam image of the *Argus*, one of the wrecked vessels in the Thames Estuary investigated using geophysical survey



## The Protocol

Despite this level of investigation, there were always likely to be chance finds and unknown sites found during the course of dredging work at sea. The tidal environment of the Thames, as in most large estuaries, is difficult to investigate archaeologically and the extent of the area to be dredged was considerable, over 11.5 square miles in total. Archaeological work was largely conducted using extensive geophysical survey methods, including sidescan sonar and multibeam echo sounder, as these techniques best suited the size of the development area. Using geophysical techniques, objects on the seabed surface or buried at a shallow depth were likely to be found. There was still scope, however, for more deeply buried archaeology to be found by the dredgers and a reporting protocol was put in place as a safety-net. This ensured that finds made by the crews of the dredgers involved were reported and then investigated by archaeologists.

Over 650 objects of archaeological interest were found and reported during the dredging. These were subsequently examined by specialists from Wessex Archaeology, The Port's archaeologists. After the initial stage of dredging a further geophysical survey was carried out by DP World London Gateway



concentrating upon those areas where archaeological material had been found by the dredgers. Analysis by Wessex Archaeology revealed that there were potentially over 540 objects or 'anomalies' of archaeological interest on the seabed in the area surveyed. A number of these that were thought to have particularly high potential were investigated further.

One discovery made through the Protocol, and subsequently investigated by geophysical survey and divers, has revealed a significant site of Second World War archaeology. The unique story it tells of daring, courage and espionage is the subject of this booklet.

## Discovery and Investigation

On the 9 August 2011 45 pieces of aircraft wreckage were found by the crew of the suction dredger *Congo River* during the dredging of the navigation channel. The wreckage was caught in the screen of the dredger's 'drag head', which prevents large objects from blocking the suction pipe. The finds were immediately reported to DP World London Gateway Port and through them to Wessex Archaeology.

The finds included fragments of aluminium aircraft frame and parts from a large format camera. A stamp reading 'R8.88' was visible on the frame which was evidence that the dredger had encountered the wreck of a Junkers 88 (Ju 88) – a German bomber used extensively in World War II.

The difficulty facing DP World London Gateway Port and their archaeologists was that they did not know exactly where the finds had come from. Although the dredger had been following a planned track and was recording its movement using GPS, it was only when it had a full load that the drag head was recovered and the finds made. The wreck could have been anywhere along the dredged track.



The *Congo River* unloading dredged material into the reclamation areas during the construction of DP World London Gateway Port

Records of the geophysical survey carried out before dredging commenced were checked but no evidence of the crash site was found. A further sidescan sonar survey was therefore carried out. This located two small anomalies or 'mounds' close together on the seabed within the track taken by the dredger. As the Ju 88 was twin engined and engines often survive intact even when the rest of an aircraft on the seabed has disintegrated, these anomalies were identified as possibly being the remains of the aircraft.

To confirm this tentative identification further work was necessary and so in February 2012 Wessex Archaeology and the Port of London Authority jointly mounted a diving investigation. Working with zero-visibility in the dark and silty environment of the estuary bed, the divers were able to confirm that the geophysical anomalies were aircraft wreckage. The finds they retrieved were similar to those recovered by the dredger. The wreck site of the Ju 88 had been found.



## Junkers 88

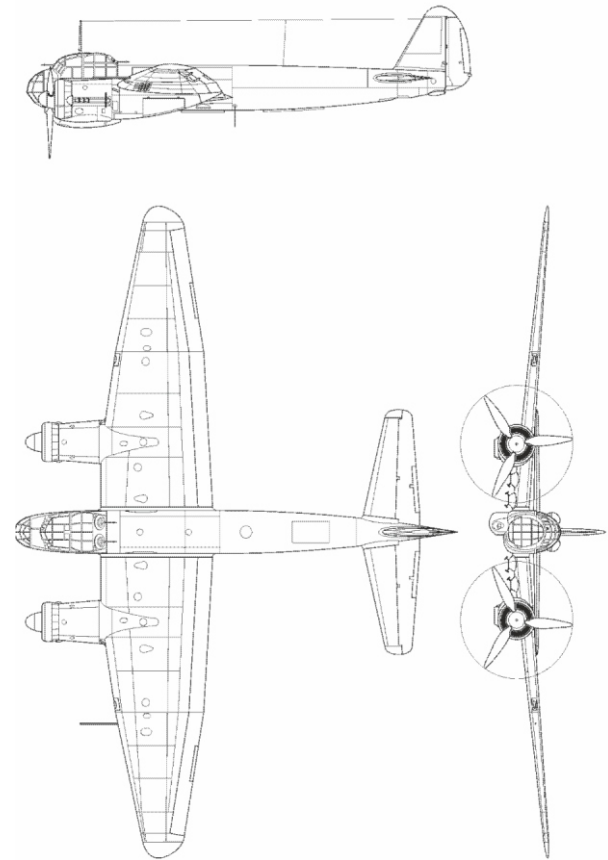
The Junkers 88 was a mainstay of the German *Luftwaffe* throughout World War II and over 15,000 were built. Although no match for a fighter in a dogfight, it could do just about anything else and proved itself to be one of the most versatile warplanes in history. Many versions of the aircraft were produced for use as fast bombers, night fighters, reconnaissance aircraft, long range escort fighters, dive bombers, tank-busters, torpedo bombers, transports and even as test beds for early jet engines and flying bombs.

The Ju 88 typically carried a crew of four and was originally conceived in the 1930s as one of a number of highly advanced *Schnellbomber* or 'fast bomber' designs, similar in concept to the British Mosquito. It was intended that their main defence against fighters would be sheer speed rather than a heavy defensive armament. However, whilst they proved to be ideal for supporting the German Army's *Blitzkrieg* through France, mass German bomber attacks during the subsequent Battle of Britain and the Blitz were not a great success. The relatively small German aircraft could not deliver the enormous bomb loads required to seriously weaken Britain and the build up to war had also spurred on the development of faster RAF fighters

such as the Hurricane and the Spitfire. Whilst the Ju 88 still had enough speed to evade the fighters in certain circumstances, like all German bombers it became increasingly vulnerable when deployed in large formations during daylight.

Nevertheless, the Ju 88 was a great survivor and the realisation that it was no match for fighters did not affect its usefulness. During the Allied bombing offensive on Germany it proved itself to be an outstanding defensive night fighter. Carrying either torpedoes or bombs it was also much feared in an anti-shipping role, wreaking havoc against convoys from the Mediterranean to the Arctic. Even when Germany had all but lost the war, it was still being used for swift 'lone wolf' attacks on Britain. Coastal towns and coastal shipping in the Thames Estuary remained particularly fearful of these raids.

Today only two Ju 88's survive intact.



A Junkers 88

## The Gateway to London – the Air War in the Estuary

Following the fall of France in May 1940, the skies above the Thames Estuary became part of the front line between Britain and German occupied Europe. Intense fighting between the RAF and the *Luftwaffe* during the Battle of Britain in August and September of that year spilled over into the estuary as the Germans attempted and failed to defeat the RAF. As a result the planned German invasion was called off, though the estuary remained an easily navigable route for the German bomber fleets during their assault on London, the Blitz.

Throughout the war the British relied upon coastal shipping to move vital raw materials and goods. As well as handling much of this coastal trade, London was in an important strategic position between the east and south coasts and convoys gathered in the estuary off Southend before sailing to ports along both coasts. This trade and the concentration of industry, ports and military facilities within the region, combined with its proximity to occupied Europe, made the estuary a prime target for the *Luftwaffe*. Shipping was attacked with bombs, torpedoes and the highly effective aerial mines, whilst ports, industries and military bases were attacked by mass bombing raids.



An air sentry scans the skies for enemy aircraft at one of the Maunsell Forts in the Thames Estuary

After the initial German assaults, the fortunes of war swung increasingly against Hitler's forces. As British air defences became ever stronger and the *Luftwaffe* became preoccupied with both the war in Russia and the defence of the *Reich* against Allied bombers, mass daylight attacks over the estuary turned into raids and

night time missions. The last desperate mass attack by the *Luftwaffe* over England – Operation Steinbock, or the 'Baby Blitz' as it became known – took place in early 1944, although V1 missile attacks continued to test the estuary's defences until October of the same year.



This aerial activity has left archaeological traces all over the estuary. As well as iconic structures such as the anti-aircraft Maunsell forts, built on platforms out in the estuary itself, and the defences of Sheerness and Shoeburyness, debris from aircraft that have been lost over the estuary has been found during dredging for DP World London Gateway Port. Finds have included an aero engine, possibly from a German Heinkel He 111 bomber, a propeller hub from an as yet unidentified German aircraft and part of an Allied parachute.

The German air war against Britain required good intelligence. Planners and pilots needed to know where their targets were, how to reach them and how strongly they were defended. They also needed to know how effective the bombing raids they carried out had been. As a result the *Luftwaffe* put a major effort into photo-reconnaissance flights and the RAF put equal effort into stopping them. A failed German reconnaissance mission resulted in one of the most important archaeological sites encountered during the construction of DP World London Gateway.



A scene of devastation at Queen Victoria Street, EC4, after the last and heaviest major raid mounted on the capital during the Blitz

## Recovery

The wreck of the Ju 88 lay in the middle of the new shipping channel and could not be left where it was, as it would have obstructed navigation. Therefore the decision was taken to remove it under archaeological supervision.

As a crashed military aircraft, the wreck was automatically protected under the *Protection of Military Remains Act 1986* and so a licence from the UK's Ministry of Defence was obtained to carry out its removal.

With the licence in place, the large grab dredger *Cherry Sand* was deployed to carry out the removal in July 2012, under the archaeological direction of Wessex Archaeology. Each large bucket load of sand removed from the wreck site by the dredger's crane was carefully searched by an archaeologist and all of the aircraft parts found were photographed, labelled and bagged on board. Altogether more than 300 fragments of the aircraft were recovered.



Aircraft material on the deck of the *Cherry Sand* following removal from the navigation channel

These finds were transferred to Wessex Archaeology's headquarters in Salisbury to be analysed, recorded and conserved. There they could be properly examined in a controlled environment. A small amount of asbestos

was found which had to be carefully removed under controlled conditions; a reminder that aircraft wrecks can be potentially hazardous archaeological sites, even if no armaments are found.





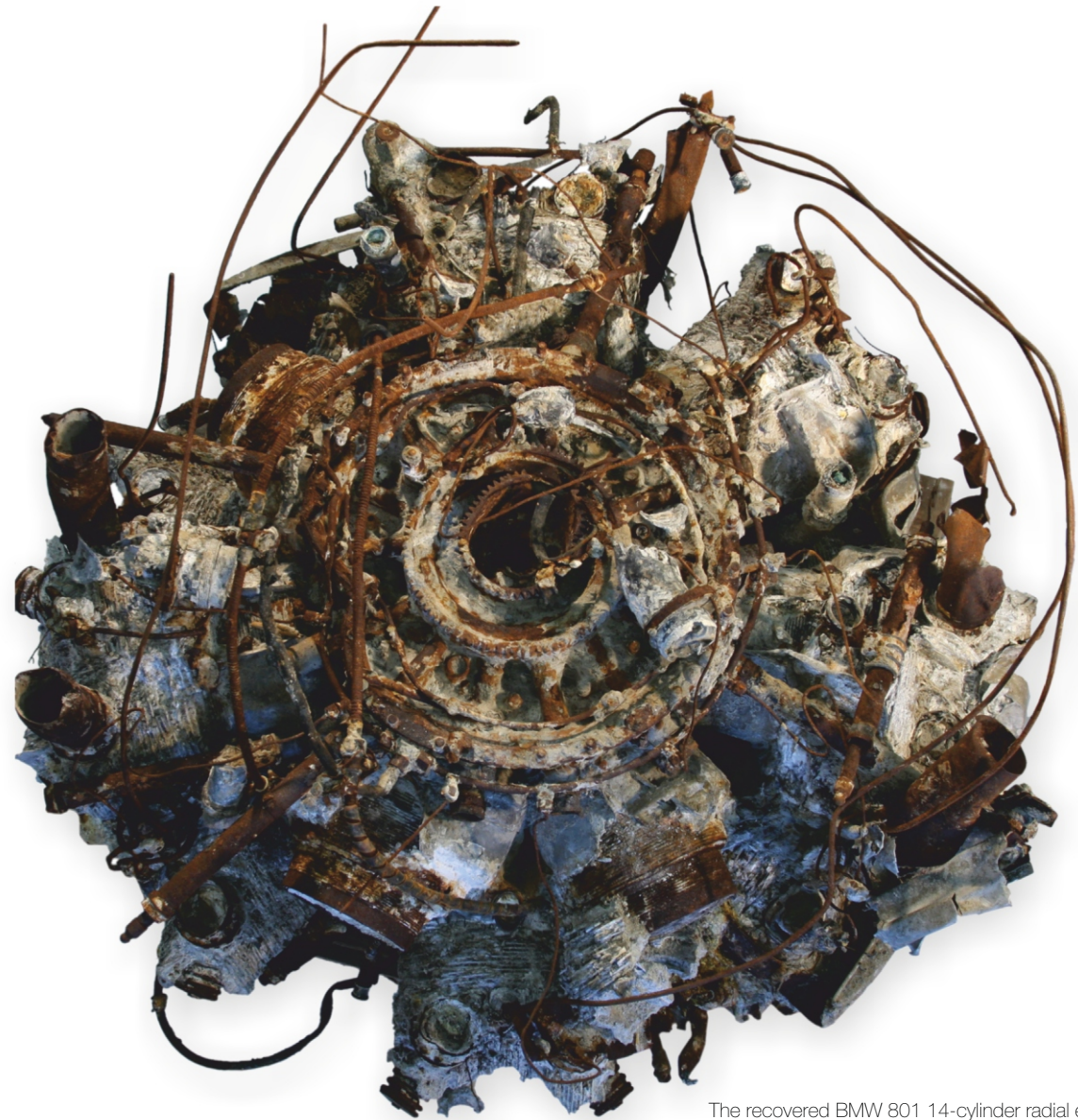
The grab dredger *Cherry Sand* in operation



## Identifying the Aircraft

It was already known that the aircraft was almost certainly a Ju 88 from the stamp marks found on the earliest dredged finds and this was confirmed by a number of the objects recovered during the clearance. The biggest of these was an aircraft engine. Although damaged, this engine clearly had 14 cylinders and was of a radial design, with the cylinders arranged like the spokes of a wheel around a central hub. Its design and various markings identified it as a BMW 801 engine – the same engine that was fitted to many Ju 88s.

Several Ju 88s are known from contemporary war records to have been lost over the estuary. However, these records are usually more concerned with what was shot down, rather than exactly where, and none of the losses traced could be positively connected with the wreck from the estuary. Instead, the aircraft was identified by a few key objects from the recovered wreckage, including parts of a nitrous oxide boost system and a reconnaissance camera.



The recovered BMW 801 14-cylinder radial engine



Parts of the nitrous oxide boost system, known by the *Luftwaffe* as the GM-1, included a boost control unit. This system was known as a *HaHa-Gerät* or *Ha-Ha Device*, and enabled the fuel for the aircraft's engines to be enriched with oxygen. This increased their performance and the aircraft's speed at high altitude. These systems are known to have been fitted to two variants or 'models' of the Ju 88, the S and the T.

Parts of a German FK 30 reconnaissance camera were also found. Whilst the S model of Ju 88 was not equipped with this type of camera, a number of the T model Ju 88s were. Furthermore, parts of a FuG 25 'Friend or Foe' radio system, which were fitted to Ju 88T, were retrieved from the seabed. These systems were designed to ensure that German air defence radars did not misidentify Axis aircraft as hostile. Finally, a 13 mm bullet case found was of the right type and size for the MG 131 machine guns carried by the T version for defence and the BMW 801 engine is also known to have been used for the T.



A data plate from the camera system  
FK probably stands for *Filmkassette*

The Ju 88T was a high-altitude reconnaissance aircraft, manned by a crew of three and built in very small numbers from 1943 onwards. Although two intact Ju 88s survive, including one at the RAF Museum in Hendon, London, and a number of wrecks have been recovered, no Ju 88Ts have survived.

The identification of the aircraft as a Ju 88T narrowed the possibilities considerably as only one Ju 88T is known to have been lost off the coast of Britain. Experimental prototype Ju 88T Works Number 0678 T9+FH was shot down on 20 April 1943 and lost in the Thames Estuary. The wreck from the Thames therefore had an identity and an intriguing story to tell.



The propeller hub made by *Vereinigte Deutsche Metallwerke* in Frankfurt, Germany

# The Mission

Junkers 88T 0678 T9+FH was lost during operational testing and whilst undertaking a photographic reconnaissance mission over Essex on 20 April 1943.

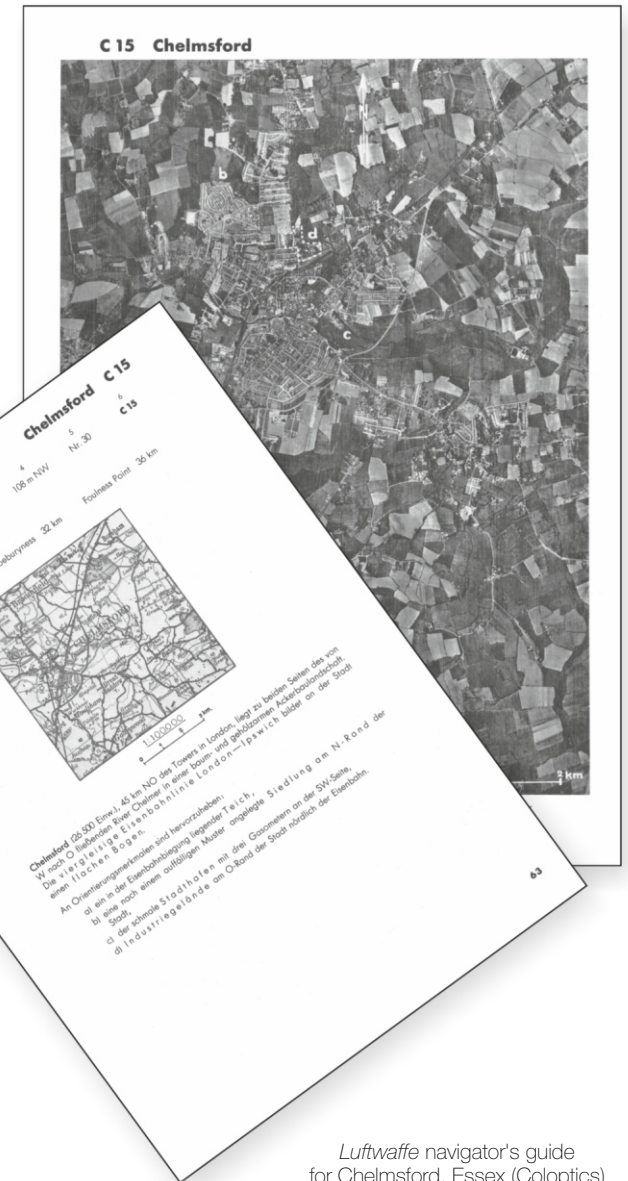
Chelmsford, home of the important Marconi New Street Works and then one of the largest production centres for military radio equipment and radar components in the world, was a *Luftwaffe* target. A week before the Junkers was lost, on the night of the 13 April 1943, 20 German bombers had attacked, dive bombing and dropping target flares and incendiaries. Just under a month later on 13 May, 85 German bombers of the *Luftwaffe's* KG6 unit attacked again. During this raid most of the bombs fell on residential streets, killing 50 and making many more homeless; 3,000 properties were damaged that night.

The task of the Ju 88's mission may have been to capture photographs of the 13 April bomb damage or to gain target intelligence in advance of the later raid. After the mission, had it been successful, the photographs would have been developed and analysed.

Some of the control equipment found with the Junkers has hand-written labels because the aircraft was the prototype for the Ju 88T, which had not yet been put into production. As well as providing intelligence, the intention of the mission is likely too have been to test the capabilities of the prototype against a defended target.



The control unit for the GM-1 boost system



*Luftwaffe* navigator's guide for Chelmsford, Essex (Coloptics)



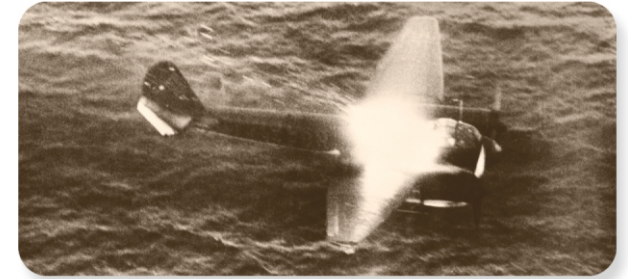
## The Intruders

Junkers 88T 0678 T9+FH was being flown by 31 year old *Leutnant* Hans-Joachim Baeumer of the *Luftwaffe* special operations unit *Versuchsverband Oberbefehlshaber der Luftwaffe* (VOdL). With Baeumer was his observer, 33 year old *Leutnant* Paul Hunold, and his radio operator and rear gunner, *Oberfeldwebel* Hermann Dietz. We know little about these men.



A Junkers 88 crew pictured in front of their aircraft (BArch Bild 1011-402-0265-03A / Pilz 1940 )

VOdL had been formed earlier in 1943 from specialist reconnaissance unit 4 *Staffel / Aufklaerungsgruppe* ObdL. The name (VOdL) means the 'Experimental Unit of the Commander-in-Chief of the Air Force' because Herman Göring, Commander-in-Chief of the *Luftwaffe* and one of the most notorious and influential members of the Nazi regime, took a personal interest in the unit's



A Junkers 88 shot down off the coast of Norway

activities. The unit was split into two squadrons known as *staffeln*. Both *staffeln* carried out covert missions, but 1 *Staffel* dealt mainly with transporting, placing and resupplying agents operating in enemy territory as well as high-risk and long-range reconnaissance missions. 2 *Staffel* flew a range of captured enemy aircraft to evaluate their performance and also used them to carry out covert missions over enemy territory. As these were demanding and dangerous operations the VOdL had an unusually high proportion of very experienced pilots. At a time when RAF and German aircrew were often in the 20–22 age group it is notable that Baeumer and Hunold were both over 30.

It is also probable that Baeumer was either an ex-Lufthansa pilot – most pilots in VOdL were – or possibly an experienced Junkers Test Pilot.

## The Interception

Despite detailed analysis, no battle damage has so far been positively identified amongst the wreckage of Ju 88T 0678 T9+FH. However the official combat report of the pilot who shot it down and the records of *Leutnant* Baeumer's two subsequent interrogations have been used to deduce what happened to it and its crew after it left the Netherlands. The former is very brief and conflicts slightly with the two rather different accounts Baeumer gave to his captors. What seems likely to have happened is as follows.

After taking off from Schiphol in the Netherlands at 10:30 in the morning, the Junkers flew west in clear skies and crossed the English coast between Harwich and the Blackwater Estuary in Essex at 32,500 feet and 168 mph. By that time the crew had received several warnings about the presence of enemy fighters near their planned route. Baeumer seems to have been lulled into a false sense of security after receiving a report that the fighters were far below him at 15,000 feet. The aircraft therefore carried on, turning towards the target of Chelmsford. Baeumer switched on the GM-1 boost system and increased speed to 193 mph, whilst his observer switched on the three cameras mounted in the 'bomb bay'.



Above: Spitfires from 331 Norwegian Squadron RAF prepare to take off  
Below: Stills from the gun camera of an RAF aircraft showing the interception of a Ju 88 over the sea

Two RAF fighters had been scrambled and told to fly to Clacton at 30,000 feet from where they were directed by ground control to intercept the intruder. Climbing to 34,000 feet they followed the 'contrails' (vapour trails) of an aircraft which led them to the Ju 88. They climbed above it so that they could attack from out of the sun and the RAF pilot saw the German Junkers turn to port and head south-east.

Meanwhile Baeumer was warned by his radio operator (the rear gunner) that the RAF fighters were at the same height as their aircraft. He later told his interrogators that he had remained confident that his aircraft could outrun the enemy. Nevertheless, he aborted the reconnaissance mission. After making the turn towards home that was seen by the fighters, he put the aircraft into a shallow dive in order to gain more speed.



Unfortunately for Baeumer and his crew, any confidence that they had in the ability of their aircraft to outrun the fighters turned out to be misplaced. They were being chased by high performance Mark IX Spitfires that had been specially modified for high altitude combat. Equipped with supercharged Rolls Royce Merlin engines, these aircraft were able to climb rapidly.

An account from Marius Eriksen, the RAF pilot who claimed the 'kill' and led the attack, stated that he got 'on the tail' of the Junkers when the aircraft were about 320 m apart. He waited until he had closed the distance to about 230 m before opening fire with a short burst from his guns. He seems to have been a good shot, because he hit the port engine, which caught fire. Eriksen fired a second burst and saw something fly off the Junkers. Just after his third burst the Junkers turned on its back and exploded. Eriksen records seeing smoke and flames coming from the stricken aircraft and watching someone bail out.

Baeumer's account made under interrogation confirms this. He first told his interrogators that it wasn't until ten minutes after he had made his turn for home that the

Spitfire attacked but in his second account he said that it was shortly after. The port engine was hit and GM-1 boost pressure was lost. The aircraft filled with smoke within a couple of minutes. As the aircraft lost height he said that he believed that the other crewmen bailed out at 26,000 feet. A second burst went through the cockpit windows narrowly missing him. As the plane lost altitude he bailed out at 4,000 feet.

Although Eriksen claimed the 'kill', there was another RAF pilot involved. The second Spitfire was flown by his compatriot Sergeant Kåre Herfjord. Eriksen said that Herfjord was following him but does not mention him engaging the Ju 88. This is a little odd because it was also recorded that his number two fired almost as many rounds as Eriksen. Baeumer only mentions one Spitfire but probably had little time to count them. Perhaps the Spitfire pilots decided to simplify what went on for the record.

The loss of Baeumer's aircraft illustrates the futility of technology such as the GM-1 boost system. By that stage of the war the *Luftwaffe* had lost air superiority over the English Channel and the performance of Allied

**SECRET** Form "F"  
**INDIVIDUAL COMBAT REPORT** ④ 35  
*Personal*  
*For Herfjord*  
2/Lt. Eriksen, D.F.M.,  
Scramble (Norwegian Pilot)  
11/14/44

A. 20. 4. 43.  
B. 332 (N) Sqdn.  
C. Spitfire IX.  
D. 1150 hrs.  
E. 10 miles west of Clacton to 10 miles S. E. of Clacton.  
F. Mainly clear - visibility good.  
G. Nil.  
H. Nil.  
J. 1 Ju.88 Destroyed. *Herfjord*

**GENERAL:** I took off with Blue 2 on a scramble and we were ordered to Clacton at 30,000 feet. When we reached this position we were told to fly on 310 degrees at 34,000 feet. We did this and followed the smoke trails of an aircraft. We went up into the sun as the aircraft turned to port and went S.E. and then I saw it was a Ju.88 My No. 2 was then about 500 yards behind me. I was about 350 yards away when I got on his tail and closed in easily to 250 yards. I gave 1 burst (1 sec.) and the port engine caught fire. After the second burst, bits flew off and I just managed to give a third burst but the B/A went over on its back and exploded. At this time smoke and flames came out and one of the crew bailed out. I led my section back and landed at base.

*M. Eriksen*  
.....  
M. Eriksen, 2/Lt. D.F.M.

Eriksen's combat report for his interception of the Ju 88 on 20 April 1943.

fighter aircraft at both low and high altitude was advancing beyond the German capability. With the appearance of Spitfires able to intercept them at high altitude, reconnaissance missions were becoming increasingly hazardous for the *Luftwaffe*. By contrast the extremely fast British Mosquito and Spitfire remained effective and relatively safe tools for photo-reconnaissance throughout the war.

Fast rescue launches for rescuing downed airmen had been developed before the war, partly at the instigation of T.E. Lawrence (Lawrence of Arabia), who famously joined the RAF as a lower ranker under a false name to escape his fame. He witnessed the drowning of the survivors of a flying boat accident because a launch took too long to reach them. Nevertheless, at the beginning of the war Air-Sea rescue services were still in their infancy and the chances of survival for aircrew that bailed out or ditched at sea were probably no greater than 20%, though the odds increased if a crewman landed close to a ship or the shore. Despite the rapid development of rescue provision, almost a third of aircrew who managed to bail out or ditch in the sea late in the war did not survive the ordeal. Aircrew were very aware of this and there are recorded instances of Allied bomber crews who chose to bail out over occupied Europe and be captured rather than try to fly their damaged aircraft back to England and risk having to ditch or bail out over the sea. Those that did survive a landing in the sea were often entitled to become members of the 'Goldfish Club'.



Two British Power Boat Company Type 2 'Whaleback' high speed launches at sea



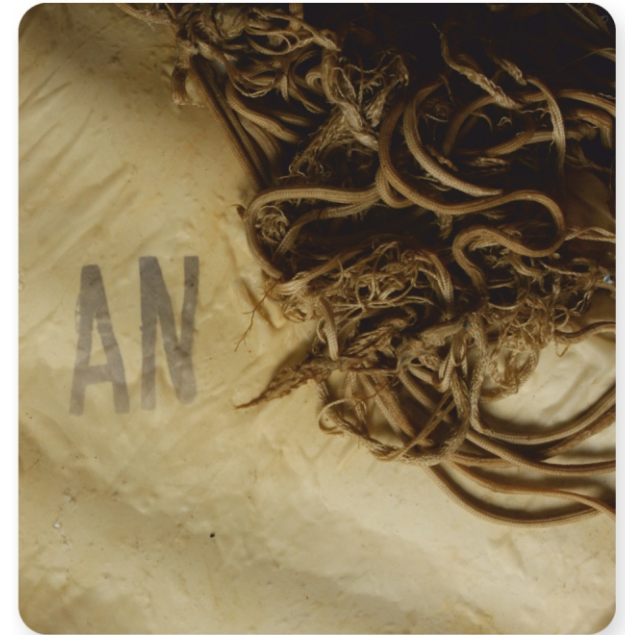
## The Fate of the Crew



Baeumer was recovered unconscious and with burns from the water by a British Air-Sea rescue launch. Nearby was an empty rubber dinghy from the aircraft, but there was no sign of Hunold and Dietz. Baeumer was taken ashore and interrogated the next day, as it was important that any intelligence that could be gained from him was 'fresh'. We know from the official record of his two interrogations that he claimed he was flying a commonplace Ju 88B, presumably in order to hide the fact that he was flying a new prototype. The latter would have been of great interest to the British and shows remarkable presence of mind in the circumstances. Baeumer spent the rest of the war as a prisoner though what happened to him after is not known.

Of the observer Hunold and the radio operator Dietz there was no trace, though Hunold's body was later found and buried at sea. Dietz may have been injured during the attack on the aircraft or bailed out successfully, although Baeumer did not come across anyone as he made his escape.

Left: A Lockheed Hudson Air-Sea rescue aircraft overflies an RAF high speed launch. These units saved many pilots' lives during the course of the war



Finds from the Thames include this Allied parachute

Baeumer was lucky to be found alive. Many aircrew who bailed out or ditched over the estuary did not survive the experience – some were not found and others drowned or died of their injuries before they could be reached. Assuming he was right in thinking that Hunold and Dietz had bailed out before him, they may have landed some distance away and been missed by the Air-Sea rescue launch which pulled Baeumer from the water.

## The Allied Pilot

Baeumer's aircraft was shot down by a young RAF fighter ace named Marius Eriksen (see cover portrait). Eriksen was born in Oslo, Norway in December 1922. He grew up in an unusually sporting family. His father was an Olympic gymnast and his brother won a slalom gold at the Winter Olympics in 1952. Eriksen himself competed in the Alpine World Skiing Championships in 1936. As a result of the links with the German and Austrian skiing community that his family developed, the Eriksens came under suspicion from their neighbours following the German invasion of Norway in April 1940. Eriksen therefore vowed to prove his family's loyalty to Norway. Aged only 17, he and two friends managed to persuade a boat operator to take them to Scotland, unaware that the vessel he was travelling in was reputedly funded by the *Abwehr* (Nazi Secret Police) in an effort to infiltrate the lines of communication to Britain. He made his way to Canada to learn to fly then returned to Britain, where he joined the 332 (Norwegian) Squadron at RAF North Weald in Essex. This RAF unit was comprised of both Norwegian and Danish pilots. Eriksen was highly adept at aerial combat, achieving seven confirmed kills before shooting down Baeumer's aircraft. He rose to the rank of Lieutenant and was awarded a number of decorations, including the Distinguished Flying Medal.



Eriksen (seated far right) poses with colleagues from 332 Norwegian Squadron RAF, probably at Catterick in April 1942

A few weeks after his encounter with the Ju 88, Eriksen's luck ran out. He was forced to bail out of his burning Spitfire Mark IX during a fighter sweep over occupied France after a mid-air collision with a German fighter. Captured by the German army, he spent the rest of the conflict in *Stalag Luft III*. Eriksen was eventually freed unharmed by British forces after being forced by his captors to march west in awful conditions as the Russians advanced.

After the war Eriksen returned to Norway and continued his successful skiing career, becoming national slalom champion twice in 1947–8. He went on to modelling work and a successful film acting career. The Marius knit sweater pattern, designed by his mother in conjunction with one of Norway's leading knitwear designers of the time, was modelled by him and is reputedly still the most popular in Norway. Eriksen died in 2009.



## The German Pilot

The German Officer piloting the Ju 88 that day was 31 year old *Leutnant* Hans-Joachim Baeumer. We know very little about his crew, *Leutnant* Paul Hunold and *Oberfeldwebel* Hermann Dietz, but files located at the *Bundesarchiv* in Germany tell us something at least about the Pilot before he was shot down.

Hans-Joachim Baeumer was born in Hirschberg, Lower Silesia (today Jelenia Góra, Poland) in February 1912, the son of a factory owner, also named Hans, and Baroness von Zedlitz und Neukirch.

He attended the Maria Magdalena Gymnasium in Breslau which, although in Germany at the time, is now in modern day Poland, in Wrocław. He spent nine years there and left in 1930.

Baeumer first worked for the *Luftwaffe* in December 1936. By his mid-twenties he was an experienced aviator and worked as a flying and gliding instructor for the National Socialist Flyers Corps (NSFK), regularly moving between 'civil' and military duties.

During the war Baeumer quickly moved up the ranks. He was a Corporal in February 1939, a Sergeant by December 1940 and eventually became a Lieutenant in October 1942. Before undertaking his war officers' flying course, Baeumer served in a number of units specialising in drogue towing. These drogues were dummy aircraft towed behind a tug aircraft and were used for live firing practice by other pilots or by ground crews. Crucially, he also spent time as a test pilot for the aircraft and parts manufacturer Siebel, based in Halle near Leipzig. The Siebel factory assembled the Ju 88 and he became an expert test pilot for this aircraft.

He undertook his advanced flying training from August to November 1942. Ten days after his course finished, Baeumer was posted to the special operations unit *Versuchsverband Oberbefehlshaber der Luftwaffe* (VOdL), the unit he was flying with when his plane was lost over the Thames Estuary. From December 1942 to February 1943, Baeumer was based on the Eastern Front in Russia. His records state that he had flown 28 war flights and 25 flights against the enemy.



Hans-Joachim Baeumer

No locations are given once he joined the VOdL, but on his return from Russia, he was probably based in France, and the RAF officers who interrogated him suspected his operating base was Orly, just outside Paris. His files don't record this but not long before he was shot down, Baeumer was awarded the Iron Cross First Class. He was wearing the insignia on his uniform when he was captured.

## The Mysterious Second Aircraft

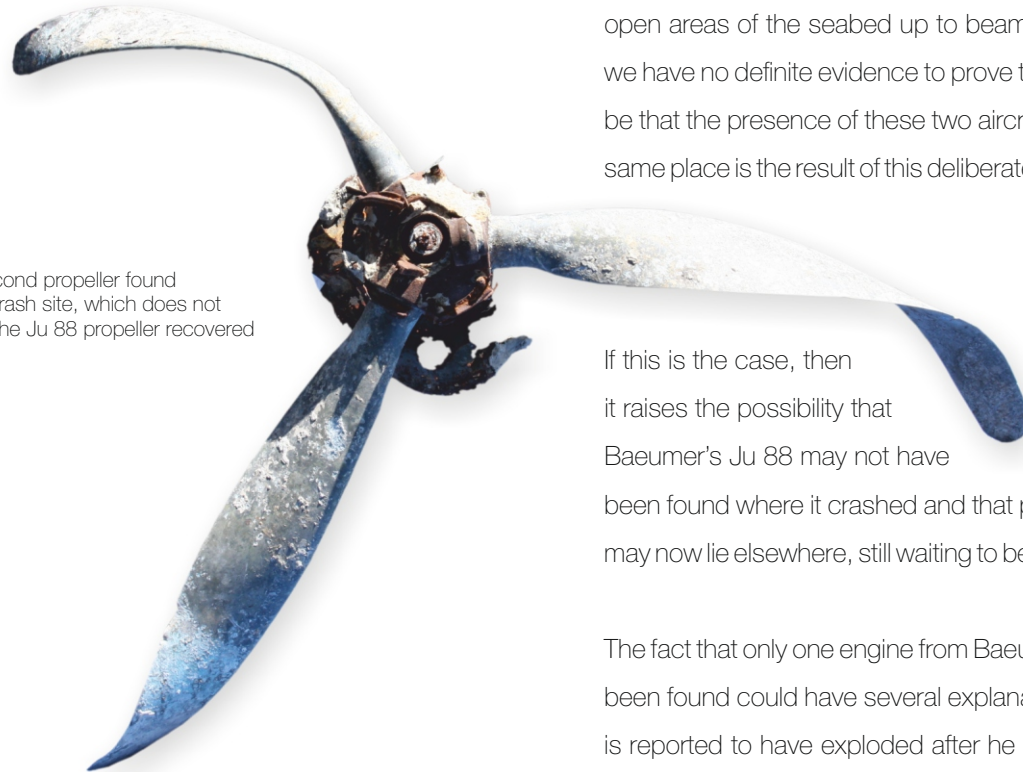
Archaeology is rarely straightforward and so it has proved in this investigation.

Early in the recovery operation a three-bladed *Vereinigte Deutsche Metallwerke* propeller with reduction gears was found. Reduction gears were commonly used to provide the lower gear ratios normally required by bombers. The propeller was entirely consistent with what might be expected on Baeumer's aircraft.

The Ju 88 was a twin-engined aircraft and it was therefore no surprise when a second propeller was recovered. However, closer inspection revealed that the propeller was of a different design and size. This means that the wreck site contained wreckage from a second aircraft. As only one aircraft was shot down in the combat on 20 April 1943, this second aircraft must have been lost in a different incident.

The second aircraft has not been identified, although it is likely that the propeller is German and possibly from an early war Ju 87 'Stuka' dive bomber.

The second propeller found at the crash site, which does not match the Ju 88 propeller recovered



Whilst it is just about conceivable that two aircraft crashed into the sea a few metres apart at different times, the presence of this propeller does point to another intriguing possibility. In the post-war period it is known that deliberate clearance of underwater debris was undertaken in the Outer Thames Estuary in order to

open areas of the seabed up to beam trawling. Whilst we have no definite evidence to prove the theory, it may be that the presence of these two aircraft wrecks in the same place is the result of this deliberate clearance.

If this is the case, then it raises the possibility that Baeumer's Ju 88 may not have been found where it crashed and that part of the wreck may now lie elsewhere, still waiting to be discovered.

The fact that only one engine from Baeumer's plane has been found could have several explanations. His plane is reported to have exploded after he bailed out and it may be that the wreckage was scattered. It is also possible that it was more deeply buried and was simply not recovered during the clearance. Alternatively if the theory that the aircraft wreck was moved to allow trawling is correct, then the engine and the other propeller may still be at the original crash site.



# Acknowledgements

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## Contributing to Local Knowledge

Archaeological investigation has enabled a unique historic aircraft wreck found during the construction of the Port to be identified, understood and preserved in part. Its story, which may otherwise have been lost, can now help us to understand the defence of the Thames Estuary and the communities that lived around it during World War II, at a time when eye witnesses are becoming fewer and fewer.

The aircraft finds are important because they help to tell the story of the defence of south-east England during the darkest days of World War II. On an international level they also bring into the narrative the role played by allies like Norway, and men such as Eriksen during the war. The fact that a secretive *Luftwaffe* unit was involved makes the whole account that much more intriguing.

The narrative of the findings at a single aircraft crash site has international resonance, even today. It also reinforces an understanding of the help that Britain received from and gave to allies such as Norway, as well as honouring the great courage and sacrifices made by men and women on both sides during the war.



German bombers over the Thames

Some of the finds from the aircraft will now go to Southend Borough Council Museum Service so that they can be preserved and displayed for the public.

As new generations become distanced by time from the events of the war, it is important that individual stories like this one are told.





RAF Spitfire Pilots 'scramble' to their aircraft during an exercise



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