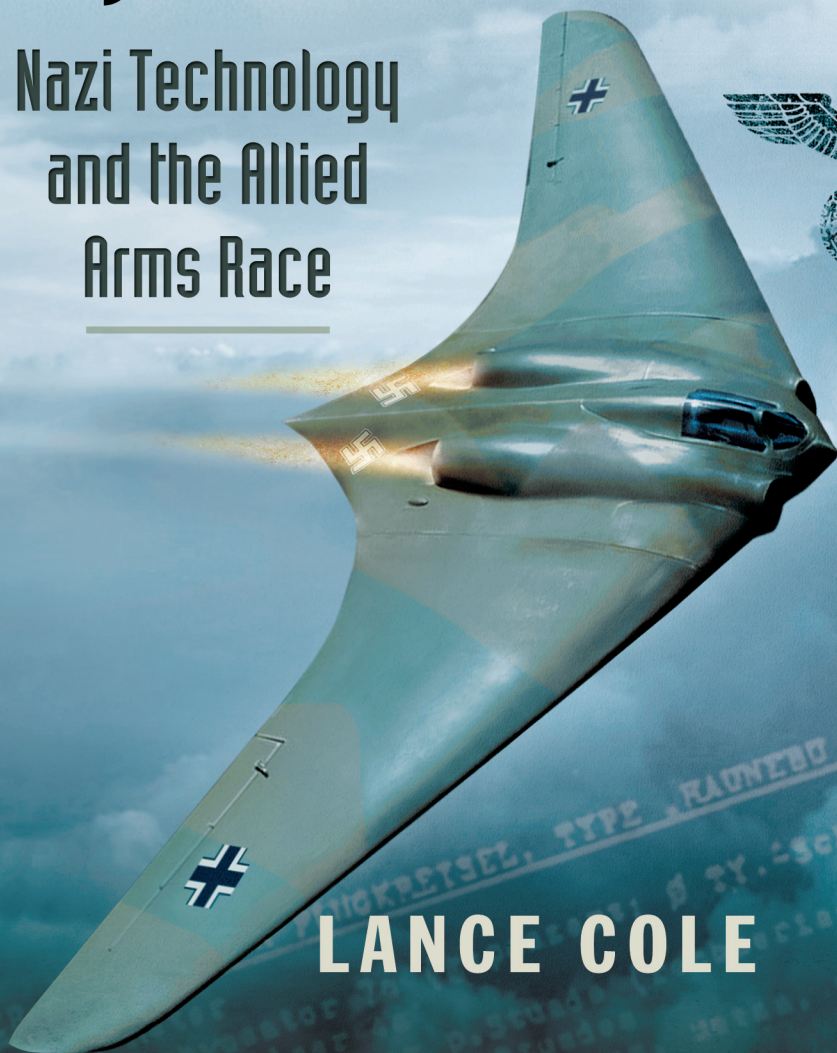




Secret Wings of World War II

Nazi Technology
and the Allied
Arms Race



LANCE COLE

Secret Wings of WWII

Also by the Author (non-fiction)

Secrets of the Spitfire

Vickers VC10

Allard The Man and his Cars

Saab The Complete Story

Citroen The Complete Story

Saab 99 & 900

Heavies

Long Haul

Secret Wings of WWII

Nazi Technology and the Allied Arms Race

Lance Cole

Illustrations by the Author



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Dedication

For B.S. Shenstone and A.M. Lippisch – men of future vision. And with thought to a man I once talked with, Air Marshal Sir Peter Horsley, and those sounds from another room.

With thanks to my grandfather Tom, and my father Francis, both for imbuing me with a love of flight.

Also for my uncle, the late Paul Minet, for encouraging a love of old and rare books. And to Anna – the soulmate without whom I would never have flown again.

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This book is the product of more than twenty-five years of research and enthusiasm (maybe even obsession), with the all-wing or nurflügel, gliding and design. There are many people who have helped me, tutored me and guided me along the way. I would like to offer thanks to all of them, sadly some have passed on. The following people are owed my specific thanks and admiration:

H. Geissler, who taught me so much and showed me such kindness. Fly well old pelican.

T.R. Godden; H.C.N. Goodhart; B.P.H. Shenstone; B.S. Shenstone; C. Wills; B. Trubshaw.

All of them taught me something about aerodynamics, all-wing flight, or the German and British aviation industries.

I am indebted to the *Flight* archive and to the RAeS and the National Aerospace Library at Farnborough where many rare items were consulted. I have to thank numerous authors and figures, as reference sources, including: Derek Wood and his *Project Cancelled*; David Myhra for his defining work on the Horten brothers; Clarence G. Lasby's 1971 tome, *Project Paperclip*; Chris Wills at the Vintage Glider Club for tutelage and documents. Thanks also to friends at the Wasserkuppe, the British Gliding Association, the Vintage Glider Club (VGC) in the UK and the VGC in Australia, all brought new information to my attention. Acknowledgements also to *Flightglobal*, its archives and the help of friends on that esteemed publication. Special thanks to TWITT – The Wing is the Thing (www.twitt.org) group – a small band of all-wing devotees and aerospace members whose resources have been of support; also to D. Bullard's nurflügel web resource.

Thanks to the Shenstone family for archive documents. Thanks also to John Kirk, hang-glider and inspirational bird man; also to Bavarian relatives and my thoughts to a man of the von Reitzenstein, for the clues from beyond the barrier.

Introduction

‘Some day the flying wing will emerge as the accepted form of a passenger airliner.’

Flight 9 January 1947

This book is not about unidentified flying objects (UFOs) and does not deal in delusions or fashionable conspiracies, yet neither does it support the establishment version of aerospace history – one created by a narrative of victory and its own prejudice. This text is about the referenced German science and technology that are the foundations of a modern aerospace era and a future not yet delivered.

Inherent within the events of this story lies the secrets and the stolen science of Germany and its seized ‘war-prize’ designs that were themselves subsequently part of a 1950s mass ‘psy-ops’ UFO campaign to obscure their origins, their development testing, and the men who had originally invented them.

The UFO story is a paradox, for we are told by rational learned men that UFOs do not exist and believers in them are conspiracy theorists or liars – yet this part of the UFO phenomenon itself was actually deliberately designed and delivered as a ‘lie’ by those same learned men in order to shield the stolen German science they were developing. It is a supreme irony that amongst learned societies and academics, any mention of the UFO subject allows them to characterise the author’s work as eccentric, lightweight, or based in conspiracy or delusion, yet the biggest paradox is that the UFO ‘lie’ was delivered to cover up something else – the work of those learned men on their seized science. The feint of creating a story about little green men in spaceships is a bizarre and long-lasting contradiction. The UFO story is, we are told, a falsehood about something that does not exist, but then we are also asked to believe a government created myth about the very science the UFO story was shaped to cover up in the first place. Confused? You were meant to be.

So the great UFO story was just part of various governments’ games that shielded stolen German and Nazi-funded future technology – science that is now manifest in the air, in space, and even in our homes. Yet the reality is that the much of the UFO story post-1945 is a deliberate construction; designed as a ruse to confuse the perceptions of the masses from the truth of what secret science

was up to. In terms of behavioural psychology, the UFO ‘story’ contains internal inconsistencies – which an able analyst could easily expose. It remains no accident that the great UFO era began soon after the Second World War amid the seizing of Germany’s entire mother lode of science and technology – a uniquely advanced global resource that was by common consent, years ahead of Allied know-how.

Indeed, the ‘psy-ops’ programme to frame seized aviation science as so-called UFOs in post-1945 America, as the nation developed its new German technology, was, by the early 1950s, led by a man who had been a senior figure within Operation Paperclip – itself the very mechanism by which German science was seized and transported back to the United States. So the ‘double feint’ was an intriguing mechanism.

The man in question was Dr Howard Robertson, a Princeton physicist. Robertson was not the only Princeton academic and physicist involved, because another Princeton luminary was high up in the intelligence field and also leading a Canadian National Research Council team investigating aeronautical technology. His name was Allen G. Shenstone and he happened to be a decorated wartime intelligence officer and the uncle of Beverley Shenstone – the Junkers, and Lippisch-trained aerodynamicist who had shaped the Supermarine Spitfire’s modified twin-axis ellipsoid wing design. By 1946, Beverley Shenstone also just happened to be in Toronto leading the Avro design function, shortly after leaving a senior post within the Canadian Government, that following a period working at the top US experimental research facility of Wright Field (Wright-Patterson AFB) – the home of America’s seized secrets and the precursor to what begat ‘Area 51’. Also on the scene, via Vienna, Paris, London and Wright Field, was Beverley Shenstone’s old friend and mentor Alexander Lippisch – ‘Mr Delta’ – the man who had brought the swept, delta-wing, all-wing planform to reality. But Lippisch was (like Shenstone) also an expert in aerofoil design, the boundary layer, Coanda-effects, disc-shaped wings, and vertical take-off and landing (VTOL) technology – as well as hydrofoils and ‘lifting body’ work.

Throw in the OSS/CIA setting up a research unit at the same time in Canada and it all begins to look somewhat obvious for the ‘theorist’. Such circumstances may explain why so many books about German or Nazi wartime technology are hung off the ‘UFO’ hook. But calmer analysis simply reveals mankind up to his usual tricks of manipulation, deceit, and advancement. These behaviours were not solely manifested in Operation Paperclip by Americans – the British, the Soviets, and, often forgotten, the French were up to it too. It is just that America threw more money at the subject.

For UFO conspiracy theorists, the circumstantial evidence would provide great evidence for their cause, but we can simply and rationally observe the synergies of alignments of clever and powerful people that were created by the establishment.

We can only suggest that this was done in order to develop and shield its new German-sourced secret technology; that is why this book is not about the UFO, but about man-made science and the seizing and the use of it. Of course, not every UFO was a German-derived test airframe, but, conversely, not every UFO was a ‘real’ UFO.

Both sides of the ‘Nazi-UFO’ landscape – for and against – have made errors of claim. In books, articles and in the web realm, the breathless UFO-ologists, randomly cite Nazi-built (and flown) disc and delta devices that may be more a reality of repeat suggestion than of verified flight science. On the other hand, the anti-UFO brigade seem to have an agenda in denying any real aerodynamic or technological achievements that stemmed directly from Nazi or German technology – other than the now undeniable basis of the NASA space programme. At first the Americans denied even that but have eventually had to admit the Nazi origins of von Braun’s achievements for NASA. But wait, having admitted that the USA’s space story had Nazi science inherent, the subsequent version of history to be presented is that the aerodynamics science of the Nazis existed in a separate dimension and that there were (a) no links between von Braun’s rocketeers and the aerodynamics men of Germany and (b) that American (and British) advances in aerodynamics had little to do with German research – even if it is admitted that rocket science did.

So the current narrative is that, although America can admit to NASA’s Nazis, it cannot and will not admit that post-war aerodynamics and recent all-wing work, were similarly influenced. All the German experts and their wind tunnels and research institutes, were, we are invited to believe, entirely separate from each other’s functions, which is untrue.

So the establishment’s current ‘patriotic’ line is that today’s swept-wings, jet engines, all-wings, delta-wings and the new blended-wings have little or nothing to do with German aerodynamics and ‘wing’ science. Perhaps in another fifty years, the Americans and the British will admit to the German roots of such science – just as they have finally had to do over von Braun and his men’s help in getting America to the moon. The internal inconsistencies in the establishment’s story are all too obvious, yet rarely challenged. And then of course, there were the Russians...

The corporate or establishment narrative now suggests that the rocketeers of von Braun, Oberth, et al, existed in isolation, and is evidentially most definitely not the case. The critics of the UFO-ologists also claim no delta-winged craft (let alone disc-craft) were developed by the Nazis or were ever actually flown, and it was American genius that turned Lippisch’s apparent early forays of delta-design into actual delta-winged airframe success. An American agenda is obvious – notably within today’s web-based forums and patriotic publications.

Such an agenda peddles its own falsehoods, for Lippisch flew a powered, true delta-wing aircraft at Berlin Tempelhof in 1931 – long before Hitler took power. Lippisch, Messerschmitt, Heinkel, Focke-Wulf, and the Hortens all developed deltoid and highly swept airframes (including composite construction and 60 degree sweepback) before and during the war – with jet, athodyd, and rocket power, with viable flight and combat-use status.

The two extreme viewpoints of the story are both locked into their own *de facto* theology and are unlikely to admit that their certainties are flawed. People who peddle certainties are notorious for denigrating the views of those who do not agree with their version of certainty. If you start with certainty, the road ahead is always blocked in advance. In between these positions lies the more balanced, evidenced, referenced facts of the thousands of tons of German research paperwork and prototypes that were vitally seized and shipped to America, Britain and Russia from 1945 onwards and which formed the future of aerodynamics and airframe design, as well as underpinning wider science.

Let us not forget that the first high-speed (Mach 4+) wind tunnel in the USA was the unique tunnel that had been ‘stolen’ from Germany post-1945 and shipped straight to the US Navy’s base in Maryland for study. And what of Sir Roy Fedden and his attempts to get the British Government to continue the development of German aerodynamics research in Germany in 1945? Why would he pursue such a course if the science was not unique, and vitally advanced?

The story of the Allied seizure of German technology is not without its funnier moments. In late 1943, Winston Churchill asked Josef Stalin for help in finding out more about von Braun’s Peenemünde rockets. So, when a Peenemünde test rocket went off course and crashed in Russian held territory, Stalin ordered assistance in securing the remains and transporting them to Moscow and then onwards to London. The only trouble was that when the vital crates were opened in England, they contained not rocket motors and flight guidance technology, but old car parts. The Soviets had kept the rocket parts for their own use and, as we know, they did not waste the opportunity.

The sheer desperation of the Allies to secure the German science can be framed by further incidents that demonstrate how far ahead Germany was.

When a von Braun A-4/V-2 crashed into a Polish river during a test flight, the Polish resistance (with British aid) sank the device at the bottom of the river bed and left it there until Germans had given up searching for it. Only then did an RAF DC-3 fly a dangerous mission into enemy airspace, land by night in a field in Poland to load the retrieved rocket, and then fly onwards to London.

Seizing war-prize materials was all in the Allies ‘national interest’ – which as so often before and since has been an excuse for concealment. Seizing German

science justified any means – *during* the war and after it had been won. Denying its advance and its provenance continues to this day.

Of course, the evils of Nazism and its war, gave the Allies every right to recompense and the death toll might be held up as a reason to make the most of the defeated Germany's works. The sheer scale of the looting of Germany's science and technology and the benefits-in-kind accrued, are one thing, but what of the benefits of the dubious ethos and practices that produced that science, and their absorption into American and British science and society? Those issues are something else entirely. It is also a great hypocrisy from those who claimed the moral high ground. Yet it is also the behaviour of man and, the cost of doing business.

Clearly, German science left a legacy.

Of the men who invented that science, little is known, other than the much quoted name of von Braun and his rockets, or passing reference to Lippisch and his delta-wing works. Some of these men were Nazis, some were not; some were victims of the Nazis. Indeed, Hitler, in 1933, took hold of the previous German scientific discoveries (some of which had German-Jewish origins) and re-branded them all as the outcome of his political movement and personal efficacy. German citizens, like many others, did what they were told to by the men who led their nation at war.

From 1933 (before the Americans, the British and the Russians stole the lot in 1945), Hitler used pre-existing, non-Nazi, German science to wage his war and his beliefs under a 'Nazi' hallmark. As he lost the war it was easy to 'copy and paste' the entire Nazi and pre-Nazi German scientific genius directly into the annals of Allied brilliance, and thence to frame the Cold War and today's technology from a repackaged basis amid the 'white-heat' of western technology in the so-called 'golden era' of British and American aviation.

Now, we have the 'flying-wing' and the new-speak metaphor of 'Blended-Wing-Body', the BWB, which we are led to believe, is a new invention, a new iteration of man's brilliance. In 2007, when NASA and Boeing framed their new all-wing BWB design future, *TIME* Magazine gave the idea an award for being a new invention! This must be just another ruse in the story of the flying-wing, or the more accurately termed all-wing. We could have had such aircraft decades ago, but a deliberate delay was factored into history and design development by powerful and so-called learned men. Such is the veneer of aeronautical history as presented not just to the layman, but also to the engineering students of today. It is, of course, a created consensus that smothers alternative evidence and blinds its observers to any other perspective. False trails have been laid. Any reader, who scoffs at such suggestions, ought to forensically consider the evidence.

It seems strange that the all-wing (be it tailless or not), with its probable minimum of 20–25 per cent less drag than a normal fuselage and tail-equipped airframe, should have been ignored by all except a few, until now it has suddenly become a new discovery. A really well-designed all-wing is a pure lifting body with no part of its form not creating a function – lift. The all-wing is all-lift and has much less drag of several types than a conventional machine. The best all-wings might be 40 per cent more aerodynamically efficient than a ‘normal’ fuselage device. What aerodynamic advance, what fuel saving, what speed, what range, have all been denied by orthodox practice and its refusals.

The likes of Penaud, Dunne and Junkers hinted at all this as long ago as 1890–1910, yet they were denied, as were the Hortens. How ironic that now the all-wing type is all the rage with designers, engineers and aeroplane makers, or ‘airframers’ as new-speak terms them.

I wrote this book after decades of fascination with the all-wing aeroplane; that is an aeroplane that has no fuselage, nor tailplane, no actual body, and which contains itself within its entirely lift-giving shape and form. The incredible aerodynamics and the unique sense that flying an all-wing delivers, is utterly different from the normal act of flight. The all-wing is the thing – to paraphrase from an American all-wing enthusiasts group of the same name.

Many years ago, strapped to an all-wing, I jumped off Walbury Hill, near my home, in a hang-glider and then graduated to sailplanes and the amazing works of Reimar and Walter Horten. I was lucky enough to know a world record holding glider pilot, a man named Nicholas Goodhart, but I called him ‘Admiral’, because he was. Goodhart taught me about all-wing gliders and he built his own almost all-wing, man-powered airframe. He was a British inventor and designer of excellence, with the life-saving aircraft carrier ‘mirror’ landing deck system for the Royal Navy to his credit. Behind the Admiral’s front, was a man who encouraged young people and young designers – people like me. Without decrying his own country or its achievements, Goodhart, like many in gliding, knew that German aerodynamic findings had been key to the future, post-1945. Goodhart had also designed a glider with an advanced wing, and he did it with a team that included a recurring name in the story of wing technology – that of Beverley Shenstone. Other sailplane pilots such as Christopher Wills and Beverley Shenstone, all knew about the Horten brothers, Lippisch, Multhopp, and many more.

My record-breaking glider pilot friend, Hilmer Geissler, lectured me long into the Australian nights on the secret science of aviation and where it came from, his once native Germany. Brian Trubshaw, the world’s leading delta-wing test pilot (Concorde), also tutored me in the Lippisch legacy and on how he flew such a device. I knew Douglas Bader as a teenage boy, he was not loved by all, but he really

was a goldmine when it came to flight and handling an aeroplane, and he knew all about the Spitfire's amazing abilities and where they came from. At that time, few believed anything other than the myths of history as written by the victors.

I know I have been lucky in the people I have known and learned from – people without whom this book would never have been researched, written and referenced. I name-drop because I can and because I admired these men so very much. I just wish I had met the Hortens, Lippisch, and Dunne.

Having noted Penaud's all-wing from pre-1900 and Junker's actual all-wing patent of 1910, this provided me with inspiration from an early age and proof that a secret knowledge had been denied. It struck me that, perhaps in the same way that when the churches were built with astro-alignments upon the sites of previous stone circles that were similarly aligned, the work of the churches was presented as perceived factual state-of-the-art wisdom by learned men, yet the old knowledge (upon which, and using such sites, the churches were built) was decried and denied by the new creed. How odd that a stone circle can be dismissed as 'pagan', or nonsense, by men who proceeded to worship their own proclaimed wisdom in buildings built upon the same sites, the same places of power, with exactly the same alignments to the compass points and the stars and the sun. What a paradox. Throw in a medieval example such as William Tyndale and his attempts to challenge an existing perceived Bible wisdom, and all that happened to him during a life on the run, and the dangers of learned men and their assumptions of the now, become obvious. These examples correlate to the years 1899–1912, when a biplane-based 'religion' became a received wisdom against previous evidence of another system of belief – all-wing monoplane shapes.

It seems to me that a feint of perception occurred *circa* 1910 with the biplane, when its perceived wisdom, which was little more than a fashion promoted by learned men, usurped the advance of the monoplane and the all-wing; only for learned men to announce twenty years later (around 1930), that the monoplane had now been 'discovered' as the stepping stone to the future. Again, in 1946, a great swept-wing, all-wing movement 'arrived' for the learned men – no doubt spurred on by the discovery and seizure of Germany's all-wing researches. Yet suddenly it was all effectively killed off by a new narrative – a new 'religion', and a claim that the all-wing could not work. By 1950, the all-wing future proclaimed by the journal, *Flight*, on 9 January 1947, was over. How odd, that just as with the story in 1910, 1950 should see a repeat exercise in denial. Yet the all-wing, and specifically, a delta-wing iteration, would suddenly reappear for the 1950s and 1960s – designed in Britain and America, of course. Concorde's wing came from Germany, but they kept quiet about that and it became British and French instead.

Little did we know that behind the scenes, composite, radar-reducing, jet-powered, swept-back all-wing airframes, with advanced controls and aerodynamics,

were being tested and held back from public consciousness for fifty years – only now to be ‘revealed’ as the latest step into the future in the form of the all-wing fighters, bombers, and BWB airliner prototypes which are, surprise, surprise, the new future creed for aerodynamics and aerospace. It all smacks of a game of smoke and mirrors and denied provenance. The Allies, from Moscow to Washington D.C., have had their fingers in the pie of stolen German science for decades and it got them to the moon. Maybe it is, without decrying all the great things achieved by these nations, time to reveal just what really went on and try to credit the forgotten and ignored men of German science – after all, they cannot all be rabid Nazi war criminals, can they...

One look at a Horten all-wing – especially one with up to 60° plus wing sweep, advanced airflow patterns, superb controls and handling, anti-radar composites and a cranked or blended leading edge, will reveal that, even though Northrop’s entire fleet of ‘flying-wing’ bombers for the United States Air Force were binned – deliberately destroyed in the 1950s – behind the scenes, seized German science in America was solving the all-wing aerodynamics, just as German science solved the problem of getting into orbit and on to the surface of the moon. German science also impacted every aspect of scientific inventions and processes across a wide spectrum after it had all been scooped-up in 1945–1946 in a retrieval campaign that cost millions, yet delivered treasures beyond measure in terms of knowledge and money in the bank, and continues to do so.

Any reader with a sensitivity to a book framing, and in a context, praising German science from a period of horror in the history of man, really ought to examine their own nation’s record before getting upset about a story that is solely focused on the incredible science that is now in use on a daily basis all over the world – science that stems in great degree from the dark days of the Second World War and the horrors that went with it. A quick check of 1930s, familial, commercial investment, and banking partner relationships between the Allies and the Germans – and the Nazis (Germans and Nazis being two *differing* entities) – will also reveal how any howls of anguish about praising such science are nothing but utter and very rank hypocrisy framed within a politically correct mirage.

So from this author’s personal standpoint, it must be stated that an apparent fascination with, or admiration for, German and Weimar Republic pre-war science, or the study of separate, *later* Nazi-funded science, does not imply nor constitute admiration for the Nazi Party or any such politics. No far-right empathy is suggested herein. Extremism of any type is not this author’s remit. Flight and the study of it, remains the writer’s fascination. I have no shame in trying to credit the inventors and designers of German aerodynamics, the historical record should be corrected. Those offended by the content of this book have the opportunity to turn the off button, and to go away and consider the record of their own nations

and citizens in the story of what happened in, and to, Germany in its various incarnations, before, during, and after the madness of the Austrian – Adolf Hitler.

Today's experts seem keen on claiming to have 'discovered' things that their education has denied them knowledge of. Have they been conditioned into a conceit of the 'now'? This is surely a good reason to examine history and not be trapped by the current cliché of 'moving forwards' thinking, with all the denial of knowledge and experience that a refusal to examine past events creates. Aviation has tainted secrets, and the Allies very cleverly swept those secrets under the carpet of public perception. This book is intended to lift that veil – focusing on aerodynamics and all-wing flight.

And yes, of course there were many talented men in post-war American and British aerodynamics and engineering who developed new ideas and new designs. It would be unfair to deny them due credit, especially the 1970s and 1980s 'gurus' of aerospace engineering. Yet it is also unfair that German science and its experts remain denied by many in the American and British academic and aerospace establishment. The roots of today's aerodynamics are, in many ways, derived from a sometimes murky and usually denied past. What really went on is a fascinating story. Realising just how many American and British scientists, engineers and designers rushed to Germany in 1945–1946 to scour the advanced design bureaus and academic institutions, is still a shocking discovery for those previously ignorant of those events. As early as April and May 1945, leading American and British aviation companies had representatives rushing through Germany in aircraft, cars and motorbikes, hunting down advanced aerospace science. Men from Avro, Bristol, de Havilland, Handley Page, Short Brothers and Vickers, grabbed drawings, blueprints, models, prototypes, anything they could lay their hands on. How revealing that the Bell Aircraft Corporation's chief designer, Robert Woods, just happened to find himself standing in Oberammergau, Bavaria, in early 1946, staring at the stunning (but overweight) swept form of the Me.P1101. Even Charles Lindbergh toured Germany and General Electric had an expert sifting through research materials; aerodynamicist Theodore von Kármán, from California, was interviewing German experts in London before the war in Europe had ended. There was much that was known and unknown, once certain minds were rudely disturbed by advanced German science.

True thinkers, philosophers of design, do not normally begin or end with certainty – for that way lie the blinkers of assumption and bigotry. The swept-wing and all-wing designers threw off perceived realities and acquired new knowledge at a pace that was unique. They knew that know-how was a certainty, but that science as it was assumed to be, was *uncertain* – just a collection of fashionable ideas of information waiting to be challenged by those who dared think beyond the rules of the learned men and their self-perpetuating societies and egos. The all-wing

men challenged the acceptance of science that those who had fallen into the trap had assumed to be definitive, which it was not. Somehow, there was something anarchic in the process of the all-wing story, maybe something even Marxist in context – for whilst the philosophers of the biplane and the fuselage configuration pontificated upon the perceptions of the now, the all-wing men tried to change thinking and tried to change the world: 100 years on, they have achieved it.

The likes of Alphonse Penaud, John Dunne, Geoffrey Hill, Ernst Heinkel, Reimar, Walter and Wolfram Horten, Hugo Junkers, Alexander Lippisch, Hans Multhopp, August Kupper, Heinrich Hertel, Jack Northrop, Beverley Shenstone, and others, must surely be watching with some degree of ‘I told you so’.

Lance Cole
Walbury Hill, Inkpen, Berkshire.

Chapter One

Germany – Stolen Science and Denied Provenance

Bavaria, April 1945

The 26 April 1945 was an auspicious day in the history of military and civil aviation and the science behind it. On that day, jet engine development and wing design for both transonic and supersonic flight were taken to a new place by the discovery of treasure. This was the day that a team of American experts in aircraft design, who were racing to seize wartime German science, fell upon Lechfeld airbase in Bavaria, Germany.

The day dawned misty and overcast, yet soon, light fell upon the wet tarmac and war-weary patina of the place. Here, a future was about to be illuminated.

Gathered at Lechfeld was the entire retinue of swept-winged and jet-powered Messerschmitt 262 flight test airframes, their pilots, and all the design and operating manuals to go with the hoard. Here, the JG7 fighter squadron, which towards the last months of aerial combat operated from Brandenburg in northern Germany, had now gathered as the Reich collapsed. Also present were a few pilots from the non-operational KG54 Me 262 training wing. In January–March 1945, the Me 262 fleet had shot down thirty Allied aircraft – the last just over three weeks earlier. These Me 262 pilots had been trained to kill, as all fighter pilots are, and their revolutionary machines had swept the lumbering prop-powered Allied marauders from the German sky when a few, brief encounters had taken place. But it was all too late; the crazed-mind of Hitler had delayed the Me 262s development and its use as had been intended – as a fighter. Instead, he had demanded it be deployed as a bomber.

Like many things of the Reich, it was madness and no amount of science could outweigh the course of fate.

Also secured from Lechfeld was another advanced machine – the Arado 234 – which had unusually podded engines and host of new design features, including a very interesting crescent-wing design that was unique. An all-wing Me163 rocket plane is also said to have been found.

The Americans, from a special team based out at Wright Field (now Wright-Patterson AFB), are reputed to have arrived at Lechfeld in a high-speed cloud of noise, revving engines, shouts, and drawn weapons. The men who poured

2 Secret Wings of WWII

into Lechfeld on that damp morning were headed by Colonel Harold E. Watson, USAAF (Air Tech/Intel), as leader of the team from the secret research facility at Wright Field, who, with his men, descended upon the treasure like vultures in a feeding frenzy. Within days, long convoys of trucks had taken everything they could across Germany to France and an airfield south of Paris, and then onwards to Cherbourg. There, a fleet of large vessels, including the HMS *Reaper* (previously an American vessel), waited to steal the booty of the future away to its new resting place at Wright Field and at the US Navy flight test centre at Patuxent River.¹

Of the twelve flying examples of the Me 262 – machines that could only be flown by trained, German Luftwaffe pilots of officer and flight sergeant ranks, who were immediately hired to fly the Me 262s to safety – there was much to study. These machines represented a treasure trove only exceeded by that of the Me 163's swept-wings of Lippisch and others, and the rockets, nozzles, vanes, and gyro-stability kit of von Braun et al. From Lechfeld and all the other German advanced research facilities, over 1,500 tons of documents were recovered – with 50 tons of paperwork on jet engine design alone. In total, nearly a million separate documented items were recorded, with over half a million of those referring to aerospace technology. By 1948, two million individually indexed documents had been recorded by the teams of several hundred researchers of the Office of Technical Services at Wright Field – with the help of many hundreds of the German experts who had invented such science in the first place. The Lechfeld hoard and other treasures of technology were collected under a 'Luftwaffe Special Technology' project entitled Operation Lusty: this alone collected over 16,000 items, weighing 6,200 tons, which yielded nearly 3,000 items of specific interest for study. Large teams of analysts and translators worked for over two years to assess and understand the scientific treasure trove.²

Of great significance, the world's only wind tunnel capable of Mach 4.4 (modified in January 1945 to Mach 5.18), 40ft wide and built as part of the Nazi rocket research, was dismantled, driven across Germany and shipped to the US Navy's Ordnance Laboratory in White Oak, Maryland. There, it began to provide advanced flow analysis, but also became part of the tribal war between competing research arms of the three American services in a vivid illustration of the constraints of egos.

Another high-speed wind tunnel was seized by the British and taken to the Royal Aircraft Establishment (RAE) at Farnborough. Thanks to having monitored German technology during the war, and surveyed crashed German aircraft that had contained new science and new ideas, the British and the US Army Air Force Technical Intelligence Service (Air Tech/Intel) had some idea of the advanced materials that would be there for the grabbing when tactical or strategic intelligence

became something else. By the summer of 1944, just a few weeks after D-Day, intelligence men at Wright Field had begun to create and then deploy a science and technology-gathering mechanism.

Science and Society

Of adjunct importance to the aerospace secrets that were stolen in 1945, 300,000 German documents *not* associated with aerospace, covering everything from nuclear science, electronics, medicine, transplants, cryogenics, agriculture, synthetic foods and preservatives, refrigeration, advanced textiles and plastics – in fact a massive mother lode of industrial and social science advances – were also seized by major American manufacturing concerns. Micro-electrics; Magnetic tape recordings; Synthetic Mica; Cold Extrusion; Advanced chemical processes and dyes; Food preservation (pasteurisation of food or liquids, such as milk or fruit juices) by ultraviolet light; Composite plastics; Pesticides; Metallurgy. All were taken.

The first contact lenses were invented in Germany. Daimler and Benz invented the modern combustion engine and ‘car’ in Germany, Diesel did likewise with his engine’s combustion cycle. From X-rays to quantum physics, to the invention of ‘Aspirin’, German science dominated academia and research from the mid-1800s onwards. All of it was German science that was to be absorbed and re-branded into all-American output after the Second World War (‘Aspirin’ had actually been seized in 1918 after the First World War). The ‘Magnetophon’ recording technology was, of course, taken by America from its German inventors in 1945. And a plastics-based recording tape had been a 1935 German invention.

Unique advances across all scientific disciplines were involved in this mass raid on German science, but the creators of such, were denied, ignored, and whitewashed out of history under the convenient cover of the ‘ex-Nazi’ headline. Their only footnotes are the thousands of pages of Combined Intelligence Objectives Sub-Committee (CIOS), Field Intelligence Agencies/Technical (FIAT) and other reports that today lie in the dusty archives of the Library of Congress, the National Archives and Records Service Washington D.C., the Public Records Office London, the Royal Aeronautical Society, the German archives, and other repositories.

Similarly, the Technical Industrial Intelligence Branch (TIIB), latterly the Technical Industrial Intelligence Committee (TTIC), was set up as an agency of the Joint Chiefs of Staff, but transferred to the Department of Commerce in January in 1946. The TIIB sent more than 400 investigators into Germany, its task was to look into every aspect of German industrial research and obtain any technology that might benefit USA PLC.

So it was not just aerodynamicists and rocketeers that the Allies ‘lifted’ out of Germany from 1945 onwards; physicists, electronics experts, chemists, geophysicists, optical experts, nuclear experts, food scientists, agrarian scientists, transplant surgeons, doctors, and a vast cadre of high-IQ inventors and thinkers were transferred to the USA, and not just in 1945–1946. As late as 1959 America was still securing German expertise and exporting such men back to American academia and military and industrial institutions. Often ignored were the German experts who were sent to Fort Monmouth, New Jersey. These men ranged from physicists to electronics inventors³ and only very recently have the realities of advanced German nuclear research been revealed with declassification and freedom of information releases largely stemming from the 1990s onwards.

The benefit to the USA and its society in terms of transferred intellectual property as technology, patents processes and spin-offs, can be rated in the many hundreds of billions of dollars – far in advance of any fiscally rational war reparations due. Indeed, in terms of supersonics and spaceflight, the benefit-in-kind could be said to be incalculable.

Prior to 1933, the majority of Nobel Prizes had been won by Germans. German science, and German qualifications were the leading academic mechanism and left many legacies upon the post-Weimar Republic that became the Germany that the Nationalsozialistische Deutsche Arbeiterpartei (NSDAP) – or ‘Nazis’ – ruled; German scientific history was laced with achievement long before the madman Hitler intervened.

Of significance, modern chemical petroleum engineering is in large part reflective of the discoveries of Baron Karl von Reichenbach (1788–1869). It was von Reichenbach of Stuttgart who owned iron and chemical factories and discovered processes that gave us paraffin, kerosene, phenol derivatives and paraben refinements. He would go on to research medicine, psychology and ‘new age’ subjects – a move that allowed scientists to categorise him as eccentric and consign him to a forgotten corner of science’s annals. But it was from his chemical engineering that industry took many themes, earning von Reichenbach a fortune in patent and licence payments from big business. Synthetic paraben fuel processes were created in Germany (the country had few oil resources) and it had to rely on synthetic fuel derived from Silesia’s rich seams of high quality, low sulphur coal reserves. The synthesising process, called the ‘Fischer-Tropsch Process’, used water, gas, hydrogen and carbon monoxide, derived from hydrogenation of coal and coke over catalysts at altered high pressures and temperatures, to generate straight-chain hydrocarbons and resultant blends or ‘cuts’ that could be further

processed to yield fuels and lubricating oils. The process of ‘PVC’ or Polyvinyl Chloride was also taken from Germany in 1945 as a war-prize.

From Volt to Diesel; from Einstein to Planck; from Koch to Ehrlich; from Daimler and Benz to Junkers and beyond, Germans of *varying* genetic extractions utterly dominated global science, invention, and technology prior to 1933. In America, Dwight D. Eisenhower was of direct German descent. In 1945, America’s leading financiers were also of close and recent German extraction and even after the Second World War had close connections to German money: I.G. Farben, makers of glues and fatal gases, had had an office in Chicago even when the Nazi’s had been shareholders.

The Germans were everywhere and so was their science.

Even something as mundane as train travel was touched by seized German science. When America and Britain were producing coal-fired steam trains in the 1930s, German railways were speeding ahead with 100mph capable diesel-powered, streamlined and swept-nosed expresses that had no locomotives, but ‘power-cars’ that were an integral part of the train. Today, train manufacturers the world over, mimic such 1930s futurism. Yet, from 1939, it would take the British another twenty-five years after the Second World War to throw off their steam locomotives. Ironically, the British, inventors of the railway and locomotives, replaced their steam-powered monsters with German devices. New British diesel-electric and diesel-hydraulic engines, which were direct copies of German designs that had been honed and proven on German rail networks, and in German war service, soon dominated British railways.

Strangely, in light of the stolen 1940s German science that the British had deployed, notably in aerospace, the British Government of the 1950s decided that direct purchase of German railway locomotives for British Rail would be too sensitive an act for the British public and national pride to accept within ten years of the war’s end. Therefore, these new advanced German diesel-hydraulic locomotive engines with their greater efficiencies would have to be built under-licence in Great Britain, under the ‘cover’ of a British manufacturing name. German science had to be re-branded for a British audience – by official government policy.

British Rail’s famous ‘Great Western’ region would be run with direct transfer of Germany’s advanced diesel-hydraulic engines and their roots in the Second World War military applications. As early as 1956, the Krauss-Meffei company sent their design drawings for their diesel hydraulic V200 and V300 (2000/3000 bhp) locomotive designs to British Rail as the basis for the ‘Warship’ and ‘Western’ classes. From the German designs came the new licence-built ‘British’ locomotives with their advanced stressed-skin monocoque bodies housing Maybach-MAN engines, Mekydro, and Voith transmissions – all recreated as British engineering marvels for an unsuspecting public. In the 1960s, even aircraft manufacturer

Bristol-Siddeley got in on the act by licence building another German-Maybach engined locomotive known in Britain as the ‘Hymek’ – but being substantially a German device. Little did the steam train and Great Western Railway aficionados realise that their beloved railway had gone German – using Nazi-era technology.

Even the English Electric ‘Deltic’ class locomotives had 1930s German-Junkers engine design roots of aviation and U-boat engine origins. Another English Electric product – the P.1 ‘Lightning’ supersonic fighter was a direct derivative of seized German science too. Today, after a recent £200 million refit, Britain’s HST high speed trains motor along at 125mph powered by a second generation of advanced, low pollutant, German engines of Maybach heritage. Again, strangely, when it came to the Avro Vulcan, Handley Page Victor, or Vickers Valiant nuclear V-bomber force, and other airframes (even Concorde), no such concerns about offending British public opinion about using German science were raised, despite the fact that these aircraft were packed with such technologies. It was all an odd paradox, a game of what today we might term ‘smoke and mirrors’.

May 1945 – Germans in Kensington and Mayfair

A fact little known in Britain today is that in May 1945, just days after Hitler’s suicide, yet before the end of the Third Reich and the war in Europe, an expensive housing block in London’s Kensington Palace Gardens area of the very exclusive West End, became home for some very interesting Germans. Just the other side of Hyde Park, in Mayfair, was also to be found number 32 Bryanston Square, W.1., this was the home of the British Intelligence Objectives Sub-Committee (BIOS) and the location of a number of the ‘retrieved’ German scientists, who were interrogated there.

These two buildings were the officially sanctioned, UK Government-funded, homes to a collection of Nazis, Germans, and notables of German wartime technology, that only weeks earlier had been deployed against London and the Allies. Ironically, much of Kensington Palace Gardens was owned by the Crown Estate – the British Royal family’s property arm. The buildings in Kensington Palace Gardens and Bryanston Square were operated by the British and American Intelligence services under the Combined Intelligence Objectives Sub-Committee (CIOS), a British Intelligence Objectives Sub-Committee (BIOS)/British Interrogation of German Scientists (BIGS) programme. These apartments (and other locations), were home to those men – some of whom would surely have been lynched by baying mobs on the streets if the local citizens had known of their presence.

The facts are that in the sunset hours of the war in Europe, Germans, including some ardent Nazis, and of note, the lead cast of men who had designed the weapons

of mass destruction arrayed against the Allies for the Third Reich, were hosted in the heart of London.

Protected by armed guards, the ‘safe houses’ contained leading names that included Willi Messerschmitt and members of his design team. Also present were Ernst Heinkel; Alexander Lippisch; Richard Vogt, the Horten brothers; Kurt Tank of Focke-Wulf and some of his top designers – including Hans Multhopp. These men and others – notably the top ten of Germany’s uranium research nuclear fusion group and further experts – were held at this and other British addresses.

The British Intelligence services knew about many German advanced processes. As an example, the British had rushed to Germany to find and interview its top expert in the ‘Fischer-Tropsch’ fuel process – a Dr Otto Roelen of Ruhrchemie AG (Ruhr Chemicals Company). Seized by British Field Intelligence Teams – from a farm deep in the Russian zone of Germany in October 1945 – a remarkable feat in itself, Dr Roelen was then transported to London on 5 November 1945 and housed at a Mayfair address.

The interrogations in London’s West End – at special locations – were vital examples of how far the Allies would go to gain technological advantage from seized German science.^{4, 5, 6}

Also present in the Hyde Park interrogation zone was von Braun and the ‘other’ V-2 rocket man, Peenemünde’s General Dornberger – who passed through en route to the Island Farm Prisoner of War Camp – known as 198/Special Camp: X-1, at Bridgend, South Wales. This was where Dornberger remained for many months as a suspected war criminal. Dornberger’s involvement in the A series, or ‘V’ for *Vergeltungswaffen* (revenge weapons) V-2 bombings, reputedly made him a candidate for trial over alleged war crimes, yet he was released to a new life at Fort Bliss in the USA, building NASA space rockets and missiles with von Braun. Dornberger’s and von Braun’s rockets had killed over 5,000 Londoners, and yet in 1945, before VE day, Dornberger was living in London just weeks after their last V-2 landed and exploded in the city. Other experts, academics and Luftwaffe officers were also present – as were high ranking German officers from other services, some of who were held at Trent Park in north London and Wimbledon in south London.

The American authorities were involved in the holding and interrogation of many of these men and their eventual release to American custody. Of interest in terms of the CIOS/BIOS arrangements, the fact that noted émigré aerodynamicist, Theodore von Kármán, from California (Caltech), just happened to drop in on the west London apartments for chats with the designers (including the Hortens), at the invitation (and transportation) of the USAAF, was no fluke. Well-fed and watered, living in a smart area for several months, such men were resident while top British and American experts interviewed them to learn what they could of

Germany's secrets. The 'internees' were even taken on exercise walks in Hyde Park and in other parts of London, and to the areas devastated by V-1 and V-2 rocket technology. They were also placed at RAE Farnborough and ordered to tell their secrets, only then to be barred and, dispensed with. How incredible it seems today that the British citizens and taxpayers should host and protect leading exponents of the weapons of war that had just been waged upon them for five long years. Yet in May 1945, this was just the cost of doing business.

Many more advanced designs and processes that are today's normality, came directly from seized German science and technology. America, Britain, and Russia, secured significant technological advances for their science and their products as a direct knowledge transfer from the vaults of the Third Reich. From trains to dyed clothes, plastics, and synthetics; from wall paint, anti-malarial pills, biological warfare, to fruit juice; from machined and extruded alloys and beyond into radio and electronic advances, German science was years ahead.

The societal benefits for the plunderers of this intellectual property were, at the time, infinite, and soon took man beyond his own planet; such was the measure of the stolen science. It is a known fact that so concerned were the Americans about the legality of their seizing of science as war-prize booty, that, on the request of the Secretary of State for Occupied Areas under the US Military Government of Germany, the USA had to take expert legal advice and redraft the Second World War peace treaty to specifically sidestep any potential legal claims against the USA from German scientists and inventors whose intellectual property had been stolen.⁷ All these years later, we cannot ignore the reality, that under the guise of revenge against the evil Nazis, German (not just Nazi) scientific research and expertise was seized and stolen by America, Britain and to some lesser degree, Russia, on a scale and manner not seen before or since. No other nation has ever been the subject or victim of such actions. It is an incredible, yet inconvenient true story, which the taint of its Nazi connections has allowed modern society to forget.

No less astounding than German and Nazi designers living in exclusive Kensington in May 1945 – yet considerably more finessed and framed for public consumption – were the close links between German and British institutions before the Second World War, not least through the British flagged, but German blooded, 'Windsor' royal family, living across Green Park at Buckingham Palace. This was the bizarre situation when the British continued to deify their post-1914 rebranded, 'House of Windsor' – in reality the utterly Hanoverian, Saxe-Coburg and Gotha-Altenberg, Mecklenburg-Strellitz, Wettin, Welf, Brunswick-Wolfenbüttel, Luneburg, Hesse, German Hanoverian noble lineage royal family that was immersed in Germanic bloodlines. Perhaps, by 1945, maybe the British public *had* forgotten the fact that, upon the outbreak of the First World War in 1914, the British king's own cousin had fled from Buckingham Palace and returned

to his German roots to fight with his relatives against the very nation that housed his own royal relatives and where he had so recently been happily resident!

The British had had an extraordinarily close relationship with the German peoples and the Catholic branch of its noble lineage prior to the First World War, but selective amnesia was, it seems, the order of the day and remains so.

In a further paradox, soon after 1945, the average American man and wife and their homes, their very lives and society itself, were not just touched by German and Nazi science, but advanced by it, into the new so-called ‘All-American’ or ‘British’ technological marvels of the 1950s and 1960s. The origins and morals of how such science was developed and at what cost, have rarely been discussed outside the von Braun space flight story. It was von Braun who was carried as a hero through the streets of ‘Rocket City’, Huntsville, Alabama, in August 1969, after man had landed on the moon. The fact that von Braun had been a major in the SS and his work had rained slave-labour built rockets on to the streets of London was ignored. In the 1950s and 1960s homes of America, the German and Nazi origins of many of the products used in such households were never considered by the consumers of such science. From being kept under guard on arrival in America, to being lauded in the streets, was but a short journey for von Braun.

The details of Operation Paperclip and its predecessors were – as the means to scoop up science and scientists – deniable, classified affairs for decades. Prior to this, a series of ‘operations’ of varying names had presaged Allied interest in seizing science under the presidential edict of the 1946 Operation Paperclip project.

Not even a Nazi party sponsored car in the form of the Volkswagen Beetle, sitting on the front of so many millions of American and British driveways across the 1960s and 1970s, caused any self-analysis or doubts as to its tainted origins. American youth of the 1960s was mobilised by Hitler’s car, and the origins of the derivative of the Beetle – the VW camper van – similarly failed to register upon the consciousness of millions of its buyers. These same people fought wars flying German-derived aircraft and also flew on American and British branded airliners that were directly derived from German and Nazi science. They were also people who watched Apollo rockets reach out into space upon the science of their Nazi origins as weapons of mass destruction against the Allies just a few years earlier.

It is claimed that the US Department of War forbade any use of proven Nazi Party members, political activists or sympathisers under Operation Overcast – which became Operation Paperclip. But that caveat was soon discarded when it was realised that nearly every expert had been made to become a Nazi Party member. The Joint Intelligence Objectives Agency (JIOA) sidestepped the problem of ‘previous history’ by allegedly creating and laying down false trails, and where necessary, reinventing records in an act of ‘cleansing’. A ‘top secret’