

Electrogravitics: From Early Experiments to Exotic Propulsion Lore

What is Electrogravitics? (Overview)

Electrogravitics broadly refers to the idea of using high voltage electric or electromagnetic fields to influence gravity or produce lift. The term was coined in the 1920s by inventor Thomas Townsend Brown, who believed he had discovered an electrical means to counter gravity. Though mainstream science considers electrogravitics a **fringe or fictional phenomenon**, it has a long history of sporadic research interest and is frequently mentioned in UFO and conspiracy circles. In essence, electrogravitics posits that a strong electric field could create an anti-gravity force or gravity-like thrust on an object. Over the past century, this concept has inspired a range of experiments, speculative propulsion designs, and obscure claims – from early capacitor devices and 1950s military projects to alleged Nazi flying discs and ancient “Vimana” flying machines. Below, we delve into the historical and modern sources on electrogravitics and survey the various proposed lift mechanisms behind these exotic craft, along with details of how they were supposed to work.

Townsend Brown and the Biefeld-Brown Effect (1920s–1950s)

The story of electrogravitics begins with **Thomas Townsend Brown**. In 1921, as a high-school student, Brown noticed a strange effect while experimenting with a Coolidge X-ray tube. When the tube’s electrodes were charged at high voltage, the tube apparently lost weight on a scale if its positive end was pointing up (and gained weight when inverted). Brown became convinced he had electrically “influenced gravity.” Teaming up with his college professor Paul Biefeld, he developed what he called a “*gravitor*” – basically a high-voltage capacitor device – and in 1929 he published “**How I Control Gravitation**” in *Science and Invention* magazine. In that article, Brown claimed his capacitors produced a mysterious force that interacted with gravity, envisioning that “**fantastic ‘space cars’**” and even ocean liners might someday be propelled by this effect. He dubbed the phenomenon *electrogravitics*, and later it also became known as the **Biefeld-Brown effect** after his mentor.

Brown’s gravitor consisted of a block of dielectric (insulating) material with electrodes on each end. When a high-voltage DC charge was applied, it would move in the direction of its positive pole. In modern terms, what Brown observed is understood as an **electrokinetic thrust** or ionic wind effect: the strong electric field pushes ionized air molecules which then produce a net force. Brown, however, believed it was a gravity-like force. Throughout the 1930s–40s he continued experiments and even proposed his device to the Navy and industry as a new propulsion method. By the early 1950s, Brown had built disk-shaped and triangular prototypes a few feet in size. He demonstrated these **hovering and rotating platforms** to military officers and scientists – reportedly, a 3-foot diameter disk could lift itself and fly in circles tethered to a pole when charged to tens of thousands of volts. According to one account, in 1952 Brown flew such prototypes for an audience at the Naval Research Laboratory and later in France; the demonstration impressed observers as the craft appeared to float with no conventional thrust. Brown optimistically

suggested that a full-scale **“electrogravitic” flying saucer** might reach speeds of **Mach 3** and that the technology could revolutionize aviation.

However, not everyone was convinced. Physicists who watched Brown's demos noticed that a faint ion breeze emanated from the high-voltage electrodes. A Caltech scientist present in the early 1950s observed that the force was likely due to **“electric wind”**, quipping that Brown and colleagues *“played hooky from their high school physics classes”* ¹. In controlled vacuum tests (where no air is present to produce ion thrust), Brown's devices yielded little or no force. This strongly suggested the effect was **electrohydrodynamic** rather than gravitational. Indeed, later hobbyists would popularize “ion lifter” devices based on Brown's designs – lightweight balsa and foil contraptions that fly using the ion wind principle when connected to a high-voltage supply. Brown nonetheless maintained his interpretation that he had discovered a gravity-control technology. He sought military R&D support for his work in a 1953 proposal codenamed **Project Winterhaven**, envisioning an electrically-propelled disk craft for the Air Force. **Project Winterhaven** documents claimed his gravitator had achieved more than 100% weight lift (i.e. it could lift its own weight and more) and outlined a plan for a Mach-3 electrogravitic fighter disc.

Despite some early interest, official funding for Brown's electrogravitics was limited. The Navy did briefly support his work during and after WWII (Brown had a stint at the Naval Research Laboratory), but by the late 1950s he found himself increasingly marginalized. He died in 1985 with his dream unfulfilled. **Nonetheless, Brown's research sparked a brief “electrogravitics boom” in the mid-1950s** and left a legacy of curious minds and experiments worldwide. Today, the **Biefeld-Brown effect** is well known in aerospace hobbyist circles: it is understood as ion propulsion, yet a dedicated minority still pursues Brown's idea that some antigravitational principle might be at work in special conditions.

A small three-sided ionocraft lifter in operation (note the faint purple corona glow). These lightweight flyers use the Biefeld-Brown effect to generate lift via ionized air; while intriguing, this effect is explained by ionic wind pushing on the air, not true anti-gravity.

The 1950s “Gravity Control” Projects and Classified Research

Around 1955–1956, interest in gravity modification reached a peak in certain U.S. aerospace circles. A number of major aviation companies launched studies into **“gravity control propulsion”**, spurred in part by Brown's claims and by speculative articles in the aviation press. Historical records show that **industry and military officials took electrogravitics seriously for a few years in the 1950s**. For example, the Glenn L. Martin Company (today part of Lockheed Martin) ran newspaper ads seeking scientists “interested in gravity”. Convair, Lear, Sikorsky, Douglas Aircraft and others formed teams to investigate potential **“contragravity” propulsion**. In 1956, a private London-based think tank (Gravity Research Group, part of Aviation Studies Ltd.) compiled reports summarizing the state of the art. One report titled *“Electrogravitics Systems”* collected rumors and achievements from various companies. It noted, for instance, that **Douglas Aircraft** had put “counterbary” (anti-gravity) on its agenda (though not expecting immediate results), **Glenn Martin** predicted gravity control might be achieved within six years given a Manhattan Project-level effort, and **General Electric** and **Clarke Electronics** were testing rigs to understand the gravity-electrostatic link. **Lawrence Bell** (of Bell Aircraft) was quoted saying that development of a practicable gravity-nullifying machine was not impossible. There was even excitement in some quarters that a breakthrough in gravity propulsion could be imminent – what *Interavia* magazine in 1956 called *“the coming new age of anti-gravity.”*

American Aviation reporters coined the term “**Project Winterhaven**” for the collective military interest in Brown’s work, and there were hints that the Air Force was monitoring these developments. In one notable 1956 summary (“*The Gravitics Situation*”), the writer concludes that “*most major companies in the United States are interested in counterbary*” and that research programs on electrostatic and electromagnetic propulsion were underway across the U.S.. That report also mentioned international activity: Britain had a few private ventures and rigs in development; France, Sweden, and Canada had companies doing preliminary studies. It adds: “*Quite recently the Germans have woken up to the possibilities*” – implying that even German scientists were starting to examine wartime papers on advanced physics to catch up. Amusingly, the same report remarks that “*curiously enough the Germans during the war paid no attention to [electrogravitics]*”, calling it basically a U.S.-originated field pioneered by Townsend Brown. This is interesting in light of later legends (discussed below) that Nazis had their own flying discs – but as of the mid-1950s, contemporary experts did **not** believe the Third Reich had any antigravity program.

By 1957, the open enthusiasm cooled off. It’s often claimed in conspiracy literature that “gravity control” research went black (classified) around that time. Indeed, public discussion faded, and the companies involved became quiet on results – suggesting either the topic was a dead end or any advances were absorbed into secret defense programs. There isn’t clear evidence that any radical breakthrough was achieved; most scientists concluded that the modest thrust observed was due to electrical wind or other prosaic effects. In later years, occasional declassified documents and personal accounts trickled out, indicating small-scale military experiments continued into the 1960s. (For example, there were Air Force contract projects to study **ion propulsion** and **mass reduction** on aerospace structures, though not necessarily yielding an antigravity device.) The **Gravity Research Foundation**, a civilian institute founded by Roger Babson, also kept interest alive by hosting essays on gravity modification, though much of that work was theoretical.

Electrogravitics remained largely out of the public eye until it experienced a mini-revival in the late 1980s and 1990s among UFO researchers and fringe science authors. Notably, a 1980s book “*The Philadelphia Experiment – Project Invisibility*” speculated that Townsend Brown’s work had been incorporated into secret government projects and UFO propulsion. In the late 1990s and early 2000s, Dr. Paul LaViolette and others wrote articles suggesting that the Air Force’s **B-2 Stealth Bomber** might actually exploit electrogravitic technology: they pointed out that the B-2 charges its wing leading edges to high voltage (officially to dissipate static and ionize the air for stealth), which these authors interpret as an *electrogravitic lift enhancement* system. LaViolette argued that the B-2’s high-voltage electrostatic equipment could reduce its effective weight or drag, allegedly giving it greater range than can be explained by fuel alone. The Air Force has never confirmed such claims, and mainstream analysts attribute the B-2’s performance to conventional aerodynamics and propulsion. Still, the mere suggestion shows how **electrogravitics became entwined with military secrecy lore**: any advanced aircraft or UFO sighting became fodder for speculation that antigravity research from the ‘50s had been realized in some black project.

Alleged Nazi Electrogravitic Craft (Vril, Haunebu & Die Glocke)

Ironically, although 1950s experts stated the **Nazis hadn’t worked on electrogravitics**, a rich mythology arose later claiming that Nazi Germany had indeed developed antigravity flying saucers. These stories surfaced starting in the 1960s and gained popularity through the ‘80s and ‘90s, blending fact, fiction, and

pseudoscience. **Obscure German projects – some real, some fabricated – became the basis of the Nazi UFO mythos.** Here are the key legends and the supposed lift mechanisms behind them:

- **Vril Society and RFZ Discs (1920s–1930s):** An occult inner circle in Weimar and Nazi Germany called the “Vril Society” was said to have attempted the first antigravity craft. One account (from writers like Jan Van Helsing and Vladimir Terziski in the 1990s) claims that as early as 1922, psychic mediums of the Vril Society received otherworldly technical data to build a disc. The result was the *RFZ-1* (Rundflugzeug-1, or “Round Aircraft 1”) allegedly test-flown in 1934. It reportedly crashed on its first hop. They followed with *RFZ-2*, a 16-foot disc completed later in 1934, which introduced a “**Magnetic Field Impulse Steering**” system for control. This craft was supposedly operational by 1940, with one photo claimed to show it flying over the South Atlantic. These early Vril discs’ propulsion is vaguely described as **electromagnetic** – harnessing earth’s magnetic field or using some kind of rotating electric field for lift and thrust (the specifics are not well documented in the lore, hence described as “unknown physics”). By 1939, the Vril/SS effort allegedly produced *RFZ-5*, also known as **Haunebu I**, a disc about 25 meters (82 ft) in diameter that could carry a crew of 8. Haunebu I was claimed to reach speeds of 12,000 km/h (approximately **7,500 mph**!) and even exit Earth’s atmosphere. It was even dubiously said to carry two **laser cannons** (an anachronistic detail).
- **Haunebu II and III (1940s):** The Nazi SS Unit E-IV (within the engineering corps) supposedly took over and expanded the disc program. *Haunebu II* was a larger, refined model (85–100 feet across) that underwent multiple prototypes by 1943–44. Some versions had bunks and could be armed; one drawing shows a turret with a “**Donar Ray**” gun underneath. Haunebu II allegedly could achieve “*near-space capability*” with top speeds around **3,200 km/h (2,000 mph)**. A still larger *Haunebu III* (over 400 feet in diameter) was planned as a deep-space craft, though there’s no evidence it ever flew. Blueprints for a *Haunebu IV* and even a cigar-shaped mothership called **Project Andromeda** (139m long) also appear in some versions of the mythos. The **propulsion mechanism** attributed to the Haunebu series is often called a “**Thule Triebwerk**” or “**tachyonator**” engine in these sources. This appears to be a pseudonym for an advanced **electro-magnetic-gravitational** engine drawing power from zero-point energy or “Vril” energy. One author describes it as a rotating **electrogravitational field drive**, perhaps involving high-voltage, high-speed rotation of a mercury-based plasma to create lift (parallels are often drawn to the later “Nazi Bell”). In short, the Haunebu craft supposedly combined **electrostatic** and **gyroscopic** effects to cancel gravity – a concept with no scientific proof, but repeatedly asserted in fringe literature.
- **Viktor Schauberger’s Vortex Engine:** A real Austrian inventor, *Viktor Schauberger*, worked on unconventional **fluid dynamics** and **implosion** technology during the Nazi era. He built a device called the **Repulsine**, a spinning vortex turbine intended to create lift by sucking in air and creating a low-pressure zone. Schauberger’s work was genuinely funded in part by the SS in 1944, though his results were inconclusive. In the Nazi UFO lore, Schauberger’s ideas were merged with the Vril craft stories. For example, one alleged disc called *Vril II* (ca. 1942) is said to have used “**Schauberger’s implosion principle**” – an air-water vortex engine that “*spun rapidly like a tornado*” to **neutralize gravity**. Essentially, by creating a powerful inward vortex (an **anti-gravity suction** of sorts), the craft would reduce its weight. Some sources refer to this as a form of **diamagnetic levitation** (since rotating conductive fluids can exhibit weird effects in magnetic fields) or simply an advanced jet turbine. In any case, *Vril-2* reportedly flew at **7,000 km/h (4,350 mph)** and could make instant 90° turns – feats far beyond any conventional aircraft. It’s worth noting Schauberger himself reportedly claimed to have seen a test of a saucer that rose unpredictably and hit the hangar roof (whether by

vortex power or just poor control). After the war, Schauberger was interviewed by American intelligence; he died in 1958 and his “anti-gravity” ideas were never verified. Yet, the image of a mystical **vortex-propelled flying saucer** remains a staple of Nazi UFO tales.

- **Die Glocke (“The Bell”, 1944–45):** Perhaps the most famous alleged Nazi antigravity project is *Die Glocke*, German for “The Bell.” First revealed in the year 2000 by Polish author Igor Witkowski (and later popularized by British author Nick Cook), **Die Glocke** is described as a top-secret SS experiment in a Silesian mine toward the end of WWII. The device was said to be a large metal **bell-shaped object ~3.7 m high and 2.7 m wide** (12 ft by 9 ft) filled with strange apparatus. Inside were **two counter-rotating cylinders** containing a mercury-like, purplish metallic liquid code-named “*Xerum 525*”. When energized (possibly by high-voltage electricity or nuclear-powered plasma), these drums would contra-rotate at extremely high speed. Reportedly, during tests the Bell emitted strong radiation and lethal effects – many scientists died, and purportedly the SS **executed about 60 technicians** to maintain secrecy as the war ended. The **purpose** of Die Glocke remains mysterious in the accounts: some say it was intended as an **antigravity propulsion** experiment, others that it was a **time machine** or wormhole generator. Witkowski and Cook describe that the Bell, when operational, would glow bluish and create a **torsion field** that disrupted gravity and even the flow of time. It had to be tethered by heavy chains to a concrete rig (nicknamed “The Henge”) to prevent it from flying off. According to one source, “*When Die Glocke was in motion... the antigravity technology could warp time and space – this was the true purpose of Die Glocke. It was a time machine.*”. As wild as this sounds, the Bell story has become an entrenched conspiracy theory. Some even link it to the famous **Kecksburg UFO incident** (1965 in Pennsylvania), where a bell-shaped object crashed and was retrieved by the U.S. military – fueling speculation that the Nazi Bell was recovered by the U.S. and kept in secret. Mainstream historians, however, find **no documentation of a “Bell” device** beyond Witkowski’s dubious secondary sources, and consider it a **hoax or exaggerated tale**. It’s true that Nazi Germany pursued many Wunderwaffe (“miracle weapons”), from rockets to jet discs, but **no credible evidence of a functioning antigravity machine has surfaced**.

In summary, the Nazi electrogravitics lore – *Vril craft*, *Haunebu discs*, and *Die Glocke* – revolves around advanced **propulsion mechanisms combining high-voltage electricity, rotating fields, mercury plasma, and vortex dynamics**. These mechanisms were said to allow craft to **defy gravity and achieve extraordinary speed**. For instance, one account speaks of a planned 1945 mission to Mars using a Haunebu III-type ship, enabled by “**very high intensity electro-magnetogravitic fields**” (though it supposedly failed due to metal fatigue). Another talks of “free energy tachyon drives” hauling cargo to a secret moon base. Clearly, much of this veers into science fiction territory. Yet, it’s notable how closely later rumors about U.S. black projects would mirror these early Nazi legends – especially the idea of spinning mercury plasma to generate antigravity, as we’ll see with the **TR-3B**. Despite the lack of proof, Nazi antigravity craft remain a popular topic in fringe science, with some believing that captured German scientists continued these projects after the war (e.g. the **Paperclip** hypothesis that the U.S. and USSR obtained Nazi “flying disc” research). It’s a fascinating if highly questionable chapter in the electrogravitics narrative.

Ancient “Vimanas” and Mercury Vortex Engines

Long before modern inventors, ancient mythologies spoke of **flying machines**. In Hindu epics like the *Ramayana* and *Mahabharata*, the gods and heroes soar the skies in aerial chariots called **Vimānas**. These references are largely poetic – for example, the Pushpaka Vimana of King Rāvaṇa is described as a celestial

chariot that could travel wherever commanded ² . However, some writers and Sanskrit scholars in the 20th century have attempted to interpret certain ancient texts as **technical manuals** for aircraft. Notably, a controversial text known as the **Vaimānika Śāstra** (or Vimanika Shastra) surfaced in 1918, claiming to be an ancient treatise by the sage Maharshi Bharadwaj. It describes various types of vimanas, their construction, and propulsion. Although most scholars consider this text a 20th-century concoction (its language and concepts don't authentically date to antiquity), it became a cornerstone for ancient astronaut theorists.

According to translated excerpts, the **propulsion of Vimanas** involved rotating gyroscopic systems and electrical power. One chapter speaks of vimanas being powered by several gyroscopes placed inside a sealed, liquid mercury vortex. Indeed, the term **"Mercury Vortex Engine"** often appears in these discussions. As one modern commentator summarizes: *"The propulsion of the Vimanas, according to Kanjilal (1985), was by 'Mercury Vortex Engines', apparently a concept similar to electric propulsion."* The idea is that by rapidly spinning mercury (a conductor) in a circular chamber, perhaps ionizing it into plasma, one could create a propulsive force or even a gravity-defying effect. This resembles some later proposals for plasma thrusters and also eerily echoes the supposed Nazi Bell mercury plasma. David Hatcher Childress, a popular author on vimanas, pointed to an 11th-century text *Samarangana Sutradhara* that allegedly mentions mercury driving an "airship".

Ancient Indian texts also mention wind and fire as propulsion elements. For example, one passage describes a vimana's flight: *"Elephants ran away in panic; grass was uprooted as the vimana took off with a roar and a burst of flames"* – which sounds like a jet or rocket exhaust. Some vimanas were said to use a form of **jet propulsion**, with mercury as a fuel to generate a blast of superheated air (possibly akin to an ion jet). The *Vaimanika Shastra* itself talks about electricity, pilot controls, and even weaponry on these craft. It's frankly hard to separate mysticism from mechanics in these writings. For instance, one oft-cited claim is that in 1992 a Sanskrit scholar Dr. Ruth Reyna of India's University of Chandigarh stated that a set of documents found in Tibet contained instructions for building **interstellar spacecraft** using anti-gravity. The propulsion was said to utilize a force called *"laghima"* – described as a latent yogic ability that can "counter gravitational pull". This sounds more magical than technological, referencing the yogi's power of levitation. Nevertheless, even this story gets trotted out as evidence that ancient Indians had mastered gravity to send "Astras" (weapons or craft) to other planets.

From a scientific perspective, no actual artifacts or remains of ancient flying machines have ever been found, and the mercury engine descriptions have not been successfully replicated. The Indian Ministry of Defense once sponsored a study on the Vaimanika Shastra and concluded that its aircraft designs were pseudoscientific and wouldn't fly. Still, the **Vimana lore contributes an "ancient electrogravitics" narrative**: the notion that civilizations millennia ago may have discovered anti-gravity or advanced propulsion, possibly with the help of mercury plasmas and gyroscopes. It's an interesting parallel to modern electrogravitics stories. In fact, the Nazi interest in ancient Aryan lore and Sanskrit (e.g. Heinrich Himmler's expeditions looking for occult knowledge in India and Tibet) has fueled speculation that Nazi scientists might have tried to rediscover Vimana technology – a thematic link between the ancient and WWII era strands of anti-gravity legend. While mainstream historians reject these ideas, **Vimanas remain a staple "obscure reference" in any discussion of exotic lift technologies**. Whether metaphorical or real, the "mercury vortex propulsion" of Vimanas is essentially an early vision of electrogravitic flight.

Modern Research and Alleged Electrogravitic Craft (1990s–Present)

After the flurry of activity in the 1950s, credible research into gravity modification slowed, but it never completely disappeared. A few daring scientists and engineers have attempted experiments that they believed showed gravity-altering effects, and aerospace organizations have occasionally revisited the topic – especially as part of **advanced propulsion** studies. At the same time, the UFO community has produced whistleblower stories and conspiracy claims about operational anti-gravity craft. Here we survey the modern developments, both theoretical and anecdotal, in roughly chronological order:

- **Searl Effect and SEG (1950s–):** Although chronologically overlapping with Townsend Brown, one should note **John R. R. Searl**, an English inventor who in the 1960s claimed to have built a working anti-gravity device called the **Searl Effect Generator (SEG)**. The SEG is a rotating multi-ring magnet apparatus that allegedly levitated when the rings were electrified and spun. Searl even asserted he flew a small “levity disc” powered by this generator in the English countryside ³ ⁴. The mechanism was described as a kind of **magnetic vortex** creating an inertial thrust, accompanied by a bizarre side effect of surrounding the craft in a pinkish glow and extreme cold. Searl’s work was never verified by mainstream science (many consider him a charlatan, though he maintained a following), but it’s an example of continued private experimentation in electrogravity. The SEG concept combines rotating magnetic fields and high-voltage plasma – falling into the category of **electromagnetic anti-gravity** claims.
- **Eugene Podkletnov’s Gravity Shield (1990s):** In 1992, Russian physicist **Evgeny Podkletnov**, working in Finland, conducted an experiment with a rotating **superconductor** disk cooled by liquid helium and subjected to radio-frequency electromagnetic fields. Podkletnov reported that objects above the superconducting disk lost about **1–2% of their weight** when the disk was spinning at several thousand RPM. In 1995 he even drafted a paper claiming a “**gravity shielding**” effect, which was leaked and caused a media stir. Although Podkletnov withdrew that paper under criticism, he later published a toned-down report in *Physica C* (1997) describing an observed 0.3–0.5% weight reduction in a specific setup. If true, this would be a form of **gravitoelectric coupling** – using electromagnetic conditions (superconductivity and rotation) to weaken gravity. However, numerous attempts to replicate the result by other scientists (including NASA’s Huntsville center in 2001) found **no discernible weight loss** within experimental error. Technical critiques pointed out that maintaining stability of a large rotating superconducting disk and eliminating thermal convection effects is very hard; any tiny anomaly could be due to airflow or magnetic interference. Podkletnov stood by his claims and in 2002 went further, asserting he had built an “**impulse gravity beam generator**.” This device purportedly discharged high-voltage arcs through a superconducting emitter, producing a forward beam that could knock over objects with an invisible 1,000-g force pulse. Such claims were extraordinary and greeted skeptically. Yet, intriguingly, major aerospace entities showed quiet interest. In 2002, **Boeing’s Phantom Works** (the advanced concepts division) confirmed it had a program called **GRASP (Gravity Research for Advanced Space Propulsion)** evaluating Podkletnov’s work. Boeing tried to engage Podkletnov and reportedly ran some experiments, but faced difficulties due to Russian export restrictions and the unverified nature of the effect. A Boeing internal memo cited by *Jane’s Defence Weekly* stated, “*If gravity modification is real, it will alter the entire aerospace business.*” They and other companies like BAE Systems and Lockheed Martin at least explored the topic in the early 2000s. The U.S. Defense Intelligence Agency (DIA) also commissioned studies; one 2004 DIA report (now public via FOIA) analyzed Podkletnov’s claims and the role of superconductors in gravity research, ultimately remaining unconvinced but calling for

better experiments. To date, **Podkletnov's gravity-shield and beam remain unreplicated** in peer-reviewed science, but his work revived serious discussion of gravity-control physics after decades of dormancy.

- **“Breakthrough Propulsion Physics” and Mach Effect (2000s):** Around the turn of the millennium, NASA ran the **Breakthrough Propulsion Physics (BPP)** program (led by Marc Millis) to investigate far-out propulsion ideas, including gravity control, warp drives, and quantum thrust. While no breakthrough came of it (NASA closed the program by 2003, noting that a working antigravity technology was still decades away), it fostered some research. One notable concept is the **Mach Effect Thruster** by physicist James F. Woodward. This is based on an idea from general relativity and Mach's principle: if energy is stored and accelerated inside a device (say, in a piezoelectric capacitor), the transient mass of that system might oscillate, yielding a small net thrust in one direction. Woodward built devices that attempt to create these mass fluctuations with high-frequency electrical pulses, reporting extremely tiny thrusts (on the order of micro-Newtons). A few independent tests have had mixed results. If real, Mach effect thrusters represent a possible **propellantless propulsion** – not exactly classical electrogravitics, but a close cousin (using electromagnetic energy to directly affect inertia/gravity). This research, while fringe, has received occasional funding (even a NASA Innovative Advanced Concepts grant in the 2010s) and continues in small labs. It highlights that **gravity-modification physics is still being investigated**, albeit at the margins of science.
- **High-Frequency Gravitational Waves & Novel Field Theories:** Other modern efforts include attempts to generate or harness gravity waves through electromagnetic means. For example, some researchers like Dr. Ning Li and Dr. Douglas Torr in the 1990s theorized about AC gravity fields – a concept where a superconductor lattice could produce a gravitomagnetic effect under certain conditions. Ning Li briefly worked at Redstone Arsenal on a project to create a portable gravity generator (often reported in news as “AC Gravity”). Little came of it publicly. More recently, a Navy engineer, Dr. **Salvatore Cezar Pais**, filed a series of startling patents (2019–2020) for devices like a **“Craft Using an Inertial Mass Reduction Device”** and a **“High Energy Electromagnetic Field Generator”**. These patents claim methods to generate gravitational waves and even “warp field” effects using controlled electromagnetic fields in resonant cavities. One Navy document described a **“Spacetime Modification Weapon”** that could make a quantum vacuum plasma and immense energy fields. The Navy even invested some funds testing a Pais prototype, though reportedly without success. The patents read like science fiction and have been met with skepticism from experts (many suspect they were speculative or meant to stake out intellectual property in case China was working on similar ideas). Still, the fact that such patents exist shows that **the dream of electrogravitics is not completely dead in official circles**. The Pais concepts effectively resurrect the idea that with enough electrical energy (possibly from compact fusion reactors, as Pais alludes to, or the Lockheed Martin compact fusion concept), one might create a spacetime-distorting effect analogous to gravity control. This remains unproven, but it's exactly the kind of notion that keeps electrogravitics enthusiasts excited.
- **Black Triangles and the TR-3B:** On the more conspiratorial side, the 1990s saw a surge of **“black triangle”** UFO sightings – large silent triangular craft with bright lights, frequently reported over Belgium, the USA, and elsewhere. Some believe these aren't alien craft but human-made **electrogravitic vehicles** developed in secret. The most famous rumored project is the **TR-3B “Astra”**, allegedly a U.S. Air Force anti-gravity spy plane. While officially **“TR-3B”** doesn't exist, in 2018 a defense journalist obtained a photo of a patent diagram for a triangular craft remarkably similar to

those reports, spurring interest. According to lore (widely circulating since the early 2000s), the TR-3B is powered by a **“Mercury plasma accelerator ring”**. In theory, this ring (called the **Magnetic Field Disruptor**) is a torus of highly pressurized mercury vapor, spun at tens of thousands of RPM and supercooled, then pumped with megawatts of power from a nuclear reactor. The spinning ionized mercury is said to produce a **toroidal gravitational field** around the craft, reducing its gravitational mass by perhaps 89% (a oddly specific number often cited) and enabling the triangle to perform rapid maneuvers with little inertia. Essentially, it’s the **same mechanism as the Nazi Bell** (rotating mercury plasma) adapted into a triangular platform. A 2023 detailed article by Alex Hollings notes: *“There are lots of claims about the TR-3B’s anti-gravity drive, most of which include using nuclear power to rotate highly pressurized mercury to produce plasma, and in turn, a gravitational field.”*. The TR-3B is also tied to **Operation Paperclip** in some stories (i.e. it was developed by ex-Nazi scientists in the U.S.). No hard evidence of TR-3B craft exists, but the sheer number of sightings of silent triangular “UFOs” keeps the speculation alive.

- **The Fluxliner ARV (Alleged Reverse-Engineered Saucer):** Another famous anecdote in UFO circles is the **“Alien Reproduction Vehicle” (ARV)**, sometimes called the *Fluxliner*. This story came from aerospace illustrator **Mark McCandlish**, who in 2001 testified that a friend of his saw a secret display of flying saucer craft at Norton Air Force Base in California back in **November 1988**. According to McCandlish, inside a hangar the Air Force had three circular craft of 24 ft, 60 ft, and 130 ft in diameter. They were demonstrated hovering silently a few feet off the ground for a select audience. McCandlish drew a schematic of the purported ARV: a classic saucer shape with a crew cabin on top and a large **capacitor bank** on the bottom arranged in a ring. The ARV’s propulsion was described as an **electrogravitic drive** using rotating, high-voltage capacitor plates – essentially a giant Biefeld-Brown capacitor array. The craft had a central column which possibly housed a **Tesla coil** or some form of high-voltage generator to charge the capacitors. By rapidly charging and discharging sectional capacitors in sequence (creating an AC pulsing on a DC bias), it was theorized the craft could create a directional thrust *and* perhaps a localized gravity-cancellation above it ⁵. Dr. Paul LaViolette, who analyzed the ARV design, suggested it generated a **rotating electrogravitic field** around the hull, which could **“redirect the flow of gravity around the craft”**, thus shielding it from weight while the capacitors’ thrust pushed it upward ⁶ ⁷. In simpler terms, the ARV’s **24 capacitors** around its base would fire in a sequence that not only provided lift but also created a kind of bubble that nullified gravitational pull ⁶. The *Fluxliner* got its nickname from the idea that it might be tapping flux fields or zero-point energy. McCandlish’s friend noted details like the vehicle had old-fashioned analog dials and a submarine-style hatch, suggesting it was human-made (albeit using exotic principles) rather than alien. The ARV story remains unconfirmed, but it is one of the more detailed claims of a working electrogravitic craft. It implies that by the late 1980s, the U.S. possibly had a functional **“electrogravitic hovercraft”** derived either from indigenous research or from studying recovered UFOs. No physical evidence has come forth, so most of what we have is the conceptual sketch and the witness testimony.

Artist’s conception of a secret American electrogravitic saucer – the alleged “Fluxliner” ARV – as described by Mark McCandlish. In theory, this craft used a bank of high-voltage capacitors on its underside (segmented into pie-shaped sections) to create thrust and perhaps reduce gravity. A central coil or reactor provided the enormous electrical power required. By rapidly oscillating the charge on different capacitor segments, the ARV could produce a pulsing, rotating anti-gravity field and maneuver silently.

Whether any of these claims – TR-3B, ARV, or others – are true is unknown. They are *modern myths* in a sense, but they often tie back into the physics discussed earlier. For instance, **Salvatore Pais's patents** could be seen as a way to officially “explain” how a TR-3B might work, if it existed. One Pais patent for a “*Plasma Compression Fusion Device*” suggests a compact fusion reactor could power a high-frequency electromagnetic field that reduces inertial mass. Another Pais patent explicitly mentions a “**gravity wave generator**” that could propel a craft by creating local disturbances in spacetime. It's tempting to connect these with the rumored craft: if the ARV or TR-3B were real, they would need massive energy and novel physics, exactly what Pais was working on (Pais, notably, claimed his inventions were validated by Navy research, though evidence is scant).

Summary of Proposed Antigravity Lift Mechanisms

Across all these historical and modern cases, a variety of **lift mechanisms** have been proposed to explain how an electrogravitic craft might defy gravity. Below is a list of the major concepts and how they are supposed to work:

- **Electrostatic Ionic Thrust (Biefeld-Brown Effect):** High-voltage **asymmetric capacitors** create a thrust from the positive to negative side by accelerating ionized air molecules. *Principle:* A strong electric field ionizes the nearby medium; the ions bombard surrounding neutral particles, producing a net push. **Use:** Townsend Brown's “gravitors” and modern ionocraft “lifters.” *Note:* In air this looks like anti-gravity lift, but it's actually an electro-kinetic force (ion wind). In vacuum it produces no thrust unless other effects are involved.
- **Electrogravitic Capacitor Force:** This is Brown's interpretation of the above – a hypothesized coupling between electric charge and gravity. Brown believed a charged mass increases its gravitational interaction asymmetrically. *Principle:* A charged dielectric with a strong field might interact with spacetime curvature. **Use:** Brown's saucer prototypes and the ARV/Fluxliner design utilized large capacitors to allegedly induce gravity-like forces. *Note:* Mainstream physics doesn't support DC electric fields canceling gravity, but some fringe theories (e.g. “*T. T. Brown's electrogravity*”) hold that a polarized dielectric reduces the local gravitational field ⁶.
- **Rotating Mercury Plasma (Magneto-Aerodynamic Lift):** Rapidly spinning a ring of **ionized mercury** or other conducting fluid to generate a powerful magnetic vortex and perhaps a gravity-like field. *Principle:* The rotation of mass at high speed, especially charged plasma, might create a **toroidal gravitational field (per general relativity, moving masses generate gravitomagnetic effects)**. Additionally, the centrifugal pressure of plasma can generate lift if contained in a torus (like a dynamo). **Use:** The Nazi *Die Glocke* and the rumored **TR-3B** both involve a “mercury vortex engine” where a plasma ring is accelerated by electromagnetic fields and/or nuclear power. Ancient Vimana texts also describe mercury spinning in a vessel to propel flying craft. *Note:* No verified experiment shows significant antigravity from mercury, but mercury plasma is extremely conductive, so the magnetic fields could be huge – whether that yields lift is unproven.
- **Vortex or Implosion Aerodynamics:** Creating lift or weight reduction by spinning fluids or air in a vortex, based on **fluid pressure differentials or novel physics**. *Principle:* A rapidly rotating vortex can produce a low pressure core (Bernoulli effect) which might draw an object upward. Some also speculated that vortices could couple to gravity (unsupported by conventional physics). **Use:** Viktor Schaubberger's *Repulsine* implosion turbine and the alleged **Vril/Schaubberger discs** used air (or water/

air mix) rapidly sucked through spiral channels to generate lift, supposedly “annihilating gravity” by inward suction. Also, some UFO reports describe spinning ionized air or plasma around craft edges – a possible modern parallel. *Note:* Vortex lift is partially real (spinning air can help VTOL craft), but any **gravity neutralization via vortex** remains speculative.

- **Superconductor Gravity Shielding:** Utilizing superconductors and magnetic fields to **shield or redirect gravity**. *Principle:* In extended theories (e.g. Podkletnov's claims or EV Gray's patent), superconductors might interact with gravitons or spacetime when in certain electromagnetic conditions, producing a slight reduction in gravitational force above them. *Use:* *Podkletnov's rotating superconducting disk* was reported to cause a small gravity decrease overhead, as if some gravitational field was being blocked or modified. *Note:* Despite tantalizing hints, this effect has not been reliably reproduced; if it exists, it's very small (and some argue it could be due to magnetic forces on the test object rather than gravity).
- **Transient Inertial Mass Reduction (Mach Effect):** Oscillating the mass of a system by electromagnetic energy so that its inertia is periodically less, allowing net acceleration. *Principle:* Derived from Mach's principle, if you periodically **change an object's mass** (even by a tiny amount) in phase with an oscillating force, the object can gradually “push” itself (like a vibrating engine that moves due to mass fluctuation). *Use:* *Woodward's Mach Effect Thruster (MET)* uses stacks of piezoelectric crystals driven at high frequency; a small AC voltage causes the crystal's internal energy (and thus relativistic mass) to fluctuate. By timing these fluctuations with the push-pull of the device's motion, a net thrust is produced without propellant. Some experiments report micro-Newton thrusts. *Note:* If validated, this is a form of electromagnetic propulsion that indirectly manipulates gravity/inertia. It doesn't “cancel gravity” per se, but it could enable spacecraft to accelerate without traditional rockets. It's still highly experimental.
- **High-Frequency Gravitational Waves / Resonant Fields:** Using powerful electromagnetic fields, especially at microwave or radio frequencies, to generate gravitational waves or warp spacetime. *Principle:* Einstein's theory allows that accelerating masses or energy can create ripples in spacetime (gravitational waves). Some theorists have proposed devices like asymmetric resonant cavities or circulating electromagnetic energy that might produce a minuscule gravitational field. *Use:* The **Navy's Pais patents** for a “gravity wave generator” and “spacetime modification” fall in this category. They describe using high-energy electromagnetic plasmas, perhaps in resonant chambers, to create local gravity vibrations or warp bubbles. In UFO lore, there's also the idea of using **microwave beams** to neutralize gravity (some tie this to the infamous “Philadelphia Experiment” narrative or to reputed Soviet experiments in the 1980s, though evidence is scant). *Note:* This mechanism remains theoretical; generating detectable gravity waves typically requires astronomical energies (like merging black holes!). However, at least on paper, if one could create a focused static gravity gradient via electromagnetic means, it would be a game-changer for lift.
- **Quantum Vacuum / Zero-Point Force:** Tapping the vacuum energy and manipulating gravity via quantum effects. *Principle:* Some advanced theories suggest gravity and inertia arise from interactions with vacuum fluctuations (e.g. the Haisch-Moddel-Davis inertial theory). In such a view, an electrically charged or electromagnetically oscillating object might *polarize the vacuum* and affect its gravitational interaction. *Use:* Proposals like “**negative energy**” **warp drives** or **zero-point field thrusters** often mention using high-frequency EM fields to polarize the vacuum. While not tied to a specific historical craft, many sci-fi and speculative papers (including some of the Pentagon's

2008-2010 AAWSAP program papers) discuss using metamaterials and electromagnetic energy to reduce gravitational mass or induce propulsion. *Note:* This is highly theoretical and bordering on science fiction – no experimental proof yet that the vacuum can be harnessed for thrust, but it remains a holy grail for some inventors.

- **Hybrid Nuclear-Electric Gravity Engines:** A combination of nuclear energy and electromagnetic fields to create antigravity. *Principle:* Use a compact nuclear reactor to provide enormous electrical power, which then drives either a plasma (as in TR-3B's mercury ring) or large electrogravitic capacitors. The reactor might also directly create exotic fields (e.g. Bob Lazar's claim of an **Element 115** reactor producing gravity waves). *Use:* The **TR-3B Black Manta** is said to use a **"high-pressure mercury plasma accelerated by nuclear energy"** as its core powerplant, generating an anti-gravity field. Similarly, Bob Lazar (who claimed to work on alien craft at S-4/Area 51) described the UFO's engine as a matter-antimatter reactor with Element 115 fuel that produced gravity A-waves focused by electromagnetic amplifiers – effectively a **gravity engine** that could distort spacetime for lift and propulsion. *Note:* These hybrid concepts straddle engineering and fantasy; while nuclear reactors exist, none have been shown to produce gravity fields. But the consistent theme is **huge energy availability** enabling extreme electromagnetic effects that could, in theory, affect gravity.

Each of these mechanisms has its proponents and its challenges. **None have been openly demonstrated in a way that convinces the broader scientific community.** Nonetheless, the array of ideas – from simple ion thrust to rotating superconductors to mercury plasmas – shows the creativity and persistence of those pursuing electrogravitics. Importantly, many of the mechanisms overlap or could work in tandem. For instance, a real craft might use ion thrust for initial lift and a plasma field for inertia reduction simultaneously.

Concluding Remarks

Electrogravitics remains a tantalizing subject on the border between physics and legend. Historically, **no peer-reviewed experiment has definitively shown a violation of gravity via electric fields** – all successes to date (e.g. lifter devices) can be explained by conventional forces. Yet, as this deep dive illustrates, the idea has never died. From Townsend Brown's garage lab in the 1920s to secretive Skunk Works labs in the 21st century, researchers have kept searching for that breakthrough that might allow us to **"flip gravity on its head."** Government documents and military interest, when they surface, show just enough to suggest *someone* is looking into these possibilities – even if only to rule them out. And in the cultural imagination, electrogravitics has taken firm root: it provides the scientific-sounding backbone for countless UFO propulsion theories, Nazi super-weapon tales, and science fiction stories.

In the end, **gravity is a fundamental force not easily altered.** Mainstream physics tells us that any coupling between electromagnetism and gravity is extraordinarily weak (for example, the energy needed to bend spacetime appreciably is immense). This hasn't stopped people from trying clever shortcuts – superconductors, resonant fields, quantum tricks – to get around that limitation. Perhaps one day a real "flying saucer" will rise silently on an electrogravitic drive, and what is now obscure might become common technology. Until then, electrogravitics lives in a gray zone: part legitimate scientific curiosity, part historical anecdote, and part modern myth. It's a field where **experimental dreamers, conspiracy theorists, and open-minded engineers** all cross paths, chasing the age-old human dream of **gravity control.**

Sources: Historical documents and reports on 1950s electrogravitics; Thomas Townsend Brown's experiments and evaluations; Nazi UFO claims from researchers and skeptics; Ancient Vimana descriptions; Modern accounts of Podkletnov's work and Boeing's interest; TR-3B and ARV claims and technical speculation; and analysis of electrogravitic theories in aerospace literature ¹.

¹ Electrogravitics - Wikipedia

<https://en.wikipedia.org/wiki/Electrogravitics>

² Vimana: The Ancient Indian Aerospace Craft – Time for Indigenisation – Air Power Asia

<https://airpowerasia.com/2020/08/27/vimana-the-ancient-indian-aerospace-craft-time-for-indigenisation/>

³ [PDF] SEARL'S LEVITY DISC GENERATOR | Free Energy Community

<https://freeenergycommunity.wordpress.com/wp-content/uploads/2011/08/searls-levity-disc-generator.pdf>

⁴ [PDF] Searl Technology

<https://www.gsjournal.net/Science-Journals/Research%20Papers-Engineering/Download/8210>

⁵ ⁶ ⁷ Speculations on the Electrogravitic Propulsion System of the Flux Liner Spacecraft – The Sphinx Stargate

<https://etheric.com/flux-liner-electrogravitic-propulsion-system/>