

# Observations of apparent Exotic Propulsion technologies from Hectometer sized Deltoid Aerial Craft at low altitude

Edward Halerewicz, Jr.\*

Journal of Advanced Propulsion Methods

<http://www.joatp.org>

November 7, 2004

## Abstract

It is found that the often published ‘conclusive’ notion in regards to reports of highly maneuverable hectometer deltoid craft typically operating at low altitude are solely blimp aircraft is demonstrated to be a false presumption by means of well known buoyant force restrictions imposed by Earth’s atmosphere. By analyzing several physically consistent reports from several databases it is found that the reported performances of at least one class of presently operational hectometer scale deltoid craft incorporate an internal dynamic field drive mechanism as a means of providing aerial propulsion. The internal drive mechanism is found rather simply by a reverse analysis of the easily identifiable and often reported optical effects generated by acrobatic-like maneuvering of the hectometer deltoid craft, primarily atmospheric ionization. It is also found that the crafts propulsion system may be regarded as unconventional in that the ‘driving’ mechanisms of the craft appear to operate internally rather than externally, suggesting that atmospheric maneuverability may only be a secondary capability of the primary propulsion system.

*“I’m afraid if I dig any deeper no one is going to like what I find.”*  
–Harrison Ford as Jack Ryan in the 1994 film Clear and Present Danger

## 1 Introduction

For at least two decades large (deka to hecto-meter sized) poorly illuminated deltoid craft have been reported maneuvering just above tree canopy level and below the stall speeds of conventional fixed wing aircraft often to the bewilderment of many happenstance viewers[35, 11, 5, 8, 15, 28]. As no world government

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\*Email:halgravity@yahoo.com

has officially acknowledged the ownership or existence of these highly maneuverable hectometer craft there have been a number of hypotheses put forth to justify the crafts place of origin (usually argued to be a black projects craft of either Great Britain or the United States) and their purpose (often argued to be a stealth reconnaissance vehicle or a troop transport vehicle) [1]. Unfortunately the hypothesis put forth above pertaining to the origin and purpose of such craft are based solely on circumstantial evidence, more specifically they are based on the reported dimensions and scale of the presently unclassified<sup>1</sup> crafts in question. A non trivial matter which often gets over looked in the popular press is the simple fact that the earliest known reports of the large deltoid craft discussed within this manuscript were put on record by first hand accounts of primary eye witness to Unidentified Flying Object (UFO) organizations and have been since classified by such organizations as Flying Triangles (FTs). However early reports of so called FTs were dismissed on unproven grounds, such as the misidentification of conventional craft or mass hysteria [22], even though it is a matter of public record that the US Central Intelligence Agency (CIA) organization has manipulated UFO interpretations and myths as a smokescreen for concealing the existence of classified aircraft in the past. Since it is also of public record that unconventional aircraft such as the U-2 and the F-117 have been labeled as UFOs in the past is it not reasonable to ask that so called FTs may simply represent public records regarding next generation tactical aircraft? In fact the tactical aircraft argument presently appears to be gaining a lot of momentum at least in many aviation periodicals simply from the fact that so called FTs have been reported by so many groups and individuals (perhaps hundreds of thousands) across numerous geographical locations world wide. At present there appears to be two rather different hypothesis regarding the origin of the reported large deltoid craft, the mainstream reasoning of aerospace experts is that the so called FT craft are 'nothing more' than secret 'black projects' military aircraft (circumvented as that in itself wasn't an issue), and then they are often reclassified as 'stealth blimps' or 'Big Black Deltas' (BBDs)<sup>2</sup> [12].

On the other-hand many UFO organizations without conventional explanations for the behavior of the deltoid craft put forth the unconventional hypothesis that FT craft must originate from an advanced Extraterrestrial (ET) civilization. In many regards BBDs seem the most probable explanation for the many reports of FTs, even while seeming to be overwhelming obvious. Yet on the other foot and somewhat absurdly any possible extraterrestrial explanation for any unknown craft tends to be shunned by so called leading experts in the fields of astrobiology, engineering, and astronomy to name a few [2, 3]. One possible reason many witnesses to FT flights tend to favor unconventional

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<sup>1</sup>It is not primarily suggested that the craft in question are in fact classified black projects craft which have not undergone declassification procedures (although this possibility shouldn't be ruled out), but rather that they can not be accurately classified with publicly accessible databases.

<sup>2</sup>It is also noted that the BBD acronym only appears in reports organized by the NIDS private interest group (and appears in other literature only later), it is only used here for the same purpose NIDS conjured it up, to emphasize a more practical terminology for this class of craft.

hypothesis towards the craft may be due to their unusual behavior an excerpt from a 2004 NIDS report [36] illustrates this point:

The Flying Triangles are being openly deployed over and near population centers, including in the vicinity of major Interstate Highways. The behavior of these Triangular aircraft does not conform to previous patterns of covert deployment of unacknowledged aircraft. Neither the agenda nor the origin of the Flying Triangles are currently known.

While the presence of an ET civilization may be a highly unlikely explanation for the origin of BBDs a truly unbiased look into subject matter shouldn't rule that possibility out either, at least until a terrestrial origin is confirmed. A careful look at the two popular hypotheses discussed above leads to a glaring often overlooked quintessential problem, being that the hypothesized are both based on nothing more than circumstantial reasoning, primarily being that an observed maneuver can or can not be reasoned with conventional avionics technology. It is the primary objective of this manuscript to analyze the aerial performances of known aircraft and those found in UFO databases to determine if the reported physical characteristics of BBD/FT craft pose a serious threat to civil air traffic as suggested by a 2001 National Institute for Discovery Science (NIDS) report [37]. The author of this work also believes that the maneuvers of BBD/FT craft represent a clear and present danger to civil air traffic due to a momentary happenstance observation of such a craft in 1994 (see Appendix B), the magnitude of this danger is discussed throughout this work.

Rather than sweeping misguided notions by the popular press that UFO databases are incapable of collecting reliable data on things such as the behavior of new experimental aircraft this manuscript proves the contrary. First a brief history and introduction into what will be termed the Unconventional Hectometer Deltoid Craft (UHDC) pattern will be presented which outlines what have been labeled in the past as FTs. Proceeding is a general outline of the physical characteristics and flight performances of FTs (or BBDs) as recorded by several UFO databases which are presented in order to classify the specifications of the crafts in question. Next a set of conventional explanations for BBDs will be analyzed with the goal of finding the most likely ("conventional") explanation for the physical characteristics and behavior of such craft. Ultimately the most wildly circulated stealth blimp explanation within the popular press is found to be highly incompatible with the actual data recorded in several UFO databases world wide. Following the sections regarding the performances of BBDs and conventional aircraft a serious attempt at deducing the actual engineering parameters behind the craft in question are presented.

## 1.1 A Short Chronology

Unfortunately discussions regarding the possible existence of UFOs in the main stream scientific literature are practically non existent (a few exceptions being [2, 3]), however that is no grounds for the immediate disregard for presently

uncategorized aerial phenomena. For a proper discussion of the UFO problem in the scientific analysis skip to Appendix A, it's an unfortunate but necessary digression in attempting to analyze data collected by UFO organizations. The conundrum laid out within this manuscript has honestly been labeled the 'FT Mystery' [8] by many self proclaimed UFO researches, which received its most prominent wide scale media attention from 1989 to 1991 [22] when numerous reports of large triangular shaped craft (whose scale has been liken to the length of a football pitch, or [an American] football field) were reported by thousands over a few European Nations, namely Belgium [35]. From a credentials perspective the most relevant and reliable observations of BBDs came from radar data collected by the Belgium Air Force with tactical instruments on board F-16 fighter planes upon the pursuit of a BBD during 1990 [10]. While the Belgium observations were quite well documented, they were not in fact the first documented wide scale observation of such craft across a large region. Similar reports to those of the so called 'Belgium UFO Flap' [28] were first recorded by UFO organizations in the Hudson Valley region of New York [USA], dating far back as 1983 with reports continuing to the present day [5]. There were also widespread reports of FT craft over Wales UK during 1996 [14]. The Following year there were also wide scale reports of a chevron structure over one kilometer in length reported by many communities maneuvering low over Arizona [USA][32] skies (near Phoenix) during 1997, and that 'flap' did receive a fair amount of media attention which faded rather quickly. While the alleged Phoenix chevron incident is worth mentioning for chronology purposes the chevron craft is actually beyond the content of this manuscript as it does not categorically fit into hectometer scaled deltoid craft classification illuminated in this document. The next highly circulated FT event took place within the vicinity of Shiloh, Illinois [USA] in the year 2000, while observed only by a few the incident carries a lot of credibility as the primary observers were Police Officers [19].

Besides laying out a history of reports regarding so called FT aircraft it is also worth noting, that the first large scaled observation in the early 1980's were met with great scepticism. Yet by an analysis of currently reported BBDs as was performed by NIDS clearly demonstrates how accurate the early reporting of these craft were even though the mainstream media never took them seriously. The FTs were explained away as the misidentification of common aircraft for Hudson Valley flap [5], to public mass hysteria for the Belgium flap [22], and finally to the existence of a new stealth aircraft for the Illinois flap [12]. The chronology clearly shows that the media's reaction to first hand witnesses of BBDs were not interpreting what they were seeing correctly to they were interpreting correctly but they just weren't certain about what they were seeing, although clearly all these incidents involved the same type of craft! To put into clear terms it appears that the primary witnesses have over time been found to be accurate in their descriptions, but the media's rejection of their accounts have been historically unfounded.

Needless to say there have been numerous cases were incredibly large deltoid shaped craft were observed by a large populous which drew in at least momentary media attention. Following there were a number of a false accusations

regarding the events given by so called experts without any thorough scientific investigations thereby causing the general public not only to lose interest with the subject but to ridicule it as well. This denunciation without investigation policy of the media should not be tolerated by people wanting serious answers to modest questions, it clearly would be un ethical to use such a policy towards primary witnesses of a flight crash investigation. Therefore it should also be unethical to denounce FT reports and those of UFOs in general without an honest investigation, as there are three possible outcomes of such investigations. The possible conclusions that could be reached are as follows i) the misidentification of a known phenomena, ii) the possible discovery of new phenomena or iii) the collection of data regarding new classes of technology. Cutting to the chase you can either easily explain with a few examples that something was either an ordinary event, or that you have in fact can describe something which may not be known to the general populous. Finding answers to such modest questions underlies the very purpose for writing this manuscript, which is to provide a serious precursory scientific investigation of the so called FT Mystery. The primary questions which we address in this document are:

If BBDs use conventional aircraft technology how can they operate as reported?

If BBDs do not use conventional aircraft technology then again how do they operate?

## 2 Technology through a cloak of darkness

The sole point of the previous section was to introduce a basic history of the FT Mystery by laying out a few well recorded key dates and locations which can be cross referenced before continuing forward. It is also from those key references from which further investigations could be launched to infer in detail what defines FT and BBD characteristics. As a bonus the FT/BBD cross references also lends a predefined time-line for the first appearances of such craft, as a consequence their technology can not be considered either new or revolutionary since they've been operational for over two decades. Further without a general guideline for the properties of such craft it would also be possible for skeptics to denounce presently understood BBD profiles with the announcement of new aviation craft sharing similar profiles (e.g. arguments for B-2 Stealth Bombers as the source for FT reports), yet possessing radically different engineering attributes. The reason is that present investigators including the author believe that there are several classes of advanced delta profile craft are in use at present (e.g. <mothership.htm>, <pde.htm>[29]), which can be summed up with the words of Alexander and Whaley[13]:

Our research into the Flying Triangle 'UFO' (which we are becoming convinced is actually a family of such vehicles, and which do not all necessarily use identical propulsion systems or have similar uses)...

The purpose of this introduction and section however lays out more specific guidelines for FTs/BBDs so that newly developed aircraft in the near future (or presently operational but classified craft) can not be used to explain away BBD anomalies vis-a-vi 'plausible deny-ability.' Also from a scientific perspective it also provides an outline for the general performances and capabilities of the crafts in question due to their interactions with the environment, mass, size and other physical characteristics. From henceforth FTs and BBDs will be referred to as Unconventional Hectometer Deltoid Craft (UHDC) as it will be deduced later in the manuscript that these large scaled (aviation?) craft possess unconventional avionics technology. Also the UHDC acronym becomes necessary not only because it removes some vagueness associated with FTs and BBDs but that there exist several classifications of reports dealing with delta shaped craft with varying dimensions and capabilities [15, 11, 14], which would defeat the whole purpose of producing this manuscript.

## 2.1 UHDC Physical Appearance [15, 34, 8, 11]

*"If you haven't seen a UFO you are either very unobservant or live in a very cloudy area."* –Arthur C. Clarke

From numerous sources BBD craft are usually described to be equilateral deltoids with spans anywhere between 75-100 m (246-300 ft), and are generally reported to have rounded corners (on rare occasions 60 degree angles are reported). The lateral depth of the craft are consistently reported to be approximately 10 m (32.8 ft). The crafts themselves are often described to be poorly illuminated, although consistently there are reports of three separate lighting sources near the apex parameters. Foremost the craft seem to have two dominant ventral illumination sources, the most often reported being three domed lighting source 4.5 m (14.7) in diameter near the corner apexes of the main deltoid structure. The three primary light sources are also described to be plasma sources in that they do not illuminate the ground beneath but rather remain self contained, they are usually white in color but can alternate with Red, Yellow, and Blue (RYB). The other primary ventral lighting source is centrally located between the three apex lighting sources (and sometimes reported to be skewed slightly aft) and is often reported to be red, fuzzy red and blinking, on rare occasions it is reported to be white in color, with an upper diameter of 9 m (29.4 ft). There are also numerous reports stating that the central fuzzy red blinking light is capable of detaching from the main craft, which then moves independently and later re-attaches itself to a central dark dome structure 2.8 m (9.18 ft) in depth.

On several occasions witnesses have spotted the craft laterally and reported in many cases that there appeared to be two rows of segmented rectangular lighting sources largely reported to be yellow in colorization, with an approximate length of 1.6 m (5.25 ft). The aft portion of the craft has been described on several occasions to be concave, and possesses a single band of white light, in which a more intense rectangular segment 2 m (6.56 ft) in length actively pans back and forth upon, with the panning usually resulting in a directional

change of the craft. The craft on numerous occasions has been described to have two classes of laser-like beams, often reported latterly, one type bearing red colorization and the other white. Unlike commercial lasers the illuminated beams have been reported to be capable of stopping in mid air, with the ability to extend and retract, indicating the presence of multiple particle beams.

On a number of occasions the crafts have been angled downwards to the existent that witnesses have been able to observe a dome like structure, with segmented yellow lighting adjacent to it, similar to the lateral sections of the craft.

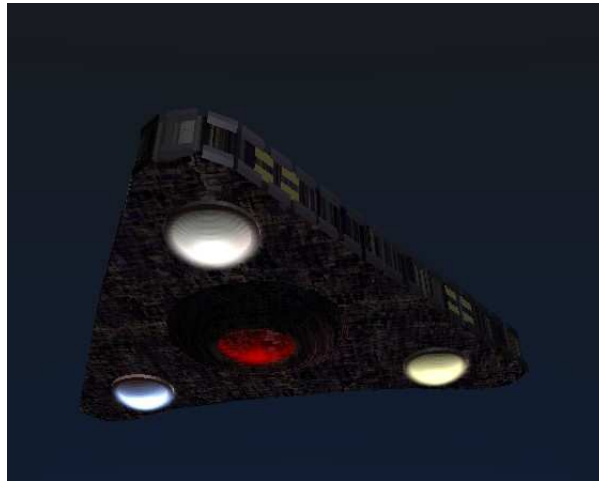


Figure 1: Composite computer generated image (cgi) of a UHDC according to data collected from several UFO databases

Those claiming to have been no more than 15 m (49.2 ft) below the craft have reported more detailed characteristics, from which the following is known. The ventral structure consist of what appears to be a grid like structures with cylindrical protrusions running parallel with the stern of the craft, along with apparent rectangular matted structures protruding. Over all the ventral surface has a silver colorization, and appears to have numerous separate lighting source on its surface similar to light emitting diodes (LEDs), sometimes lending a yellowish-green hue (with reports of Red, Green, Blue (RGB) colors), overall the surface is somewhat similar to a circuit board in appearance. The lateral portion of the craft is often described to be simply silver on its extruding leading edges, but the central 2/3's is dominated by a black band wrapping around the main structure. There have also been a great many number of reports dealing with narrow beams of white light being able to scan the terrain below at perpendicular angles, the leading fore light(s) have often been described as a narrow band search light. On a few occasions there have also been reports suggesting a forward looking search beam is located adjacent to the domed

fore apex lighting source. Even with more conservative reports from technical aircraft sources UHDC are known to possess non standard aviation technology, a report from the Federation of American Scientist (FAS) database <blimp.htm> [29] reads:

The aircraft reportedly executed bizarre maneuvers in which it stopped, rotated in place and hovered vertically, pointing its thin trailing edge toward the ground [Pope, Gregory, "America's New Secret Aircraft," Popular Mechanics, December 1991, page 109]. This vehicle's unlikely gyrations suggest that it is distinct from the other sightings. . .

Obviously these descriptions and dimensions do not correspond to any aircraft known by the general public as many skeptics attempt to argue. The UHDC are much larger than the widely known F-117 stealth fighter (wingspan 13.3 m (43'-4" ft)) and B-2 bomber (wingspan 52.43 m (172 ft)), the central lighting source is in fact roughly the size of an F-16 fighter plane (wingspan 9.8 m (32'8" ft)), clearly these lighting sources are not part of any landing gear as often claimed. If UHDC are property of the US Air Force as often suggested then why is it that this craft has never been photographed for a press release, and why has it been operational far longer than the F-117 and yet never de-classified? In any event it is clear that the US Air Force is aware of these UHDC, either by ownership and manufacture or by having intelligence on who possesses them, yet there is no public declassification regarding the craft. In this manuscript the basic function and engineering behind the UHDC are discussed in order to determine these possible motives for public denials of the existence of this highly classified craft as public safety can no longer be neglected. Before dwelling too much into possible motives of hiding advanced technologies from the general public let us first attempt to demonstrate how these UHDC could operate based off eye witness accounts using blimp technology. The reasoning is rather simple if the popular often used blimp explanation is correct then no more physical analysis would be required and the observations could be easily explained, although in the next section we will find that the volumes of these craft do not allow for the use of blimp technology avionics muddying the analysis waters.

### 3 A stealth blimp?

Due to the overwhelming and seemingly increasing reports of the UHDC many skeptics have postulated that such craft are simply stealth blimp aircraft which have been speculated in the past by aviation periodicals as early as the 1950's. First we begin by examining an anonymous report sent to the National Institute of Discovery Science (NIDS) during 2002 [12]. Foremost the 2002 NIDS reports suggest that UHDC are simply high performance blimp like aircraft known as Big Black Deltas (BBDs) having a mass approaching 100 (imperial) tons or in SI units 90.1 metric tons. However based on many reliable reports of the dimensions of UHDC from various UFO Network databases as well as by this



author's personal observation of the craft in question it is easily calculated that even if assuming that BBDs are hydrogen buoyant (see Appendix C for physical constants) BBDs could not have a buoyant force greater than  $2.07 \times 10^4 N$  (and therefore would only be capable of supporting a mass of 8.1 metric tons). The buoyant force restriction level exist because of the limitation imposed by Archimedes formula which describes the properties of buoyant force as:

$$F_{boy} = P_2A - P_1A = (P_2 - P_1)A \quad (1)$$

where  $P_1$  is the outer natural pressure of the environment and  $P_2$  is the pressure of a given body which is proportional to its area A. Before we look at the force restrictions required for the NIDS report [12], let us first check the buoyant restrictions placed upon UHDC described in the last section, plus the author's own observations within Appendix B. Due to the shape of UHDC we will substitute the formula  $A = \frac{1}{2}b \cdot l$  into the volume equations, where  $b=68.7m$ ,  $l=68.7m$ , and  $d=10 m$ , this gives the volume of the craft as

$$V_{UHDC} = \frac{1}{2}bld = 23,598.45 m^3 \quad (2)$$

Now we wish to find the buoyant force created by the volume displacement of the UHDC within the atmosphere, shown by

$$F_{b\ air} = w_{air} = \rho_{air}V_{UHDC}g = 298,563.87 N \quad (3)$$

Next we will want to introduce a Lighter Than Air (LTA) gas, since Hydrogen is the lightest gas known in science, we will use this for our calculation which gives a weight limit of

$$w_H = \rho_H V_{UHDC}g = 20,790.71 N \quad (4)$$

Now we want to find the pressure difference between the  $P_1$  and  $P_2$  gases to verify the weight limits from equation 4, this is done through:

$$F_{wld} = F_{b\ air} - w_H = (\rho_{air} - \rho_H)V_{UHDC}g = 277,722.16 N \quad (5)$$

which simply is a minor revision of equation 1. When equation 4 is converted into units of mass we find that such a set up is only capable of lifting 2.12 metric tons, a far cry from the 90.1 metric tons claimed within the NIDS report. The bottom line is that if the dimensions of UHDC are taken to be correct from witness reports it is a physical impossibility that such craft could in fact make use of blimp technology.

For fairness sake let us now examine the dimensions discussed within the NIDS report, first the BBD dimensions were reported as follows  $b=300 ft$ ,  $l=600 ft$  and a vertical surface given as  $S_{vt} = 94,245 ft^2$ . Next we will convert these imperial units to SI units, so that the depth in question will be given as  $d = (S_{vt}/2lb)^{1/2} = 10.78 m$  (35.37 ft), its not exactly precise but gives room

for error and increases the potential magnitudes of the forces in question. The volume of a BBD in metric units therefore becomes

$$V_{BBD} = \frac{1}{2}(91.44 \text{ m} \cdot 182.88 \text{ m})10.78 \text{ m} = 90,134.53 \text{ m}^3 \quad (6)$$

so the displaced buoyant force becomes

$$F_{b \ a2} = \rho_{air}V_{BBD}g = 1,140,364.05 \text{ N} \quad (7)$$

and as such the total lifting weight is derived from

$$w_{BBD \ tot} = \rho_H V_{BBD}g = 79,410.32 \text{ N} \quad (8)$$

which corresponds to a mass of 8.1 metric tons, again a far cry from the 90.1 metric tons put forth within the NIDS report. Clearly if BBDs are stealth aircraft they can not carry a load greater than 8.1 metric tons, yet the NIDS report states otherwise, from which it is seen rather obviously that the anonymous author has no expertise regarding the manufacture of blimp aircraft as the document seems to strongly suggest. Further still the author anonymous seems to be miss-informed in regards to the power and scale limitations of engineering toy models utilizing what is known as electro-kinetic motion, for an overview of such limitations see [31]. These gross errors should have been easily spotted if a precursory physical review of the article was made before its release, although it seems to demonstrate the lack of any scientific peer review process on the part of NIDS.

To put the results discussed above into perspective take the well known Goodyear blimp (GZ-20) which weighs about 12,840 lbs [20], or has a mass near 5.84 metric tons, along with the 'Hindenburg' LZ 129 which had a load carrying capacity of 200 metric tons [21]. Therefore if a LZ 129 were to be scaled down to UHDC dimensions (y dimension excluded) the blimp would only have a load carrying capacity of 50 metric tons<sup>3</sup>. Moreover if the Goodyear blimp was scaled up to UHDC dimensions (excluding y dimension) it would only have a load capacity of 17 metric tons. The english translation is that since BBDs are restricted to a 8.1 metric ton craft mass they would be even less maneuverable than a good year blimp of similar size due to buoyant force constrictions. Therefore the only two possible conclusions that can be reached by this introductory analysis is that UHDC either possesses a combination of exotic propulsion and standard Lighter Than Air (LTA) blimp technology or that LTA technology is absent all together within UHDC. In short if you are a skeptic looking to prove that UHDC are stealth blimps because of there reported large size and quite operation, you need to justify how such a large structure can use blimp technology when they are only physically capable of carrying 2.12 metric tons (or 8.1 metric tons with BBD dimensions).

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<sup>3</sup>It would also seem the NIDS report wrongly approximated the blimp specification used therein from the historical engineering specifications of the Hindenburg airliner rather than from the BBD specifications.

Further still local atmospheric ionization are often reported with UHDC craft, that along with the author's observation of the craft require the presence of a massive metallic structure in order to maintain the craft's molecular bonds with ionizations as great as 67 KeV, requiring a substance at least as massive as copper with a surface area of  $6.78 \times 10^3 m^2$ . The relevant question pertaining to this manuscript however is that if UHDC do not use LTA technology as means of maintaining a stationary position at altitude (as the physical parameters strongly indicate), then what form of propulsion do UHDC utilize? In any event UHDC utilize highly advanced avionics technology which is unheard of in the commercial aviation industry and that alone could provide motivation to classify this highly sensitive technology. The obvious question which this section raises is that if UHDC do not use LTA technology then how can they operate in the manner which they are often reported? Before we delve into that issue we will examine the flight performance often reported with such craft in order to derive secondary physical characteristics which can hint at the underlying engineering of the craft.

## 4 Reported flight performances of UHDC

Before attempting to deduce the engineering behind UHDC we will now examine the various physical maneuvers that UHDC are capable of performing as recorded by many UFO databases. Typically UHDC are visually observed just after the release of a large electrical gradient field displacement hundreds of meters larger than the main craft, giving a sheet lightning like appearance. The objects are often described as operating silently unless the observer is located directly below the craft while in operation, in which case a low level electrical hum is heard, and upon acceleration of the craft a low mechanical schwoose sound has often been reported. On numerous occasions there have been reports stating that while UHDC are hovering the three primary ventral apex domes appear white and then gradually faded to red and then faded out optically all together, suggesting a correlation between the power requirements for the crafts maneuvers and the induced external lighting of the craft.

Perhaps a general sequence of events regarding these craft maneuvers would help to clarify matters, first a flashing sheet lighting-like light appears to originate from the fore apex of the craft. Next sound similar to the engine of a jet aircraft is heard lasting near a minute, then the craft becomes silent even while executing extreme maneuvers. Typically three large ventral white domes are easily visible, the craft then typically maneuver very slowly (typically at speeds near 40 kph (~25 mph)) with the fore apex pointing towards ground, hovers, leaves an area a few kilometers square wide slowly and doubles back. Finally the craft often reportedly embody them self in an orangish glow, after which the external craft lighting is no longer visible and then another sheet lighting-like flash is observed near the fore region, after which the craft appears several kilometers away from its original location.

An overview of the reported craft maneuvers reveal much, to help euclidate

the general sequence of events given above some examples of similar incidence of known physical effects will be discussed in order to deduce the physical characteristics of the craft. First the flashing lighting first noted in many reports may be directly compared to sheet lighting, a build up of electrical charge over a large area uniformly distributed. The fact that a jet like rumble is heard just afterward is also telling, since the craft is otherwise silent it is most likely that the source of the sound was the result of an electrical induced atmospheric shock wave rather than that of an external engine. Many reports tend to indicate the three primary apex light sources are un-enabled for level flight, and lend a reddish color for slow maneuvering up to blue for quicker maneuvering. This strongly indicates a power increase for maneuvering which one would see leaving the after burner of a higher power jet engine, although this only implies ionization and does not mandate chemical ionization (e.g. [4]). The fact that craft reportedly angle downwards for forwarded momentum is unusual in that it suggest that the gravitational force affects its trajectory (not “anti-gravity”), an example of a conventional craft which does this is a helicopter (although the helicopter blades are responsible for this). If the aft illuminated band of the craft sparatically reported is responsible for forward motion, then it suggest the craft reacts against an invisible field to prevent a downward fall towards the ground. At this point our analysis is incomplete but telling, the existence of electrical ionization which may or may not be chemically based, forward movement like a helicopter, which yields sometimes a general mix of known technologies but not one single easily identifiable technology. The obvious step from this point is to put all of the pieces together in order to derive the mostly likely technologies which would allow UHDC to maneuver. But before we examine the likely physical characteristics of the craft let us examine the alternative media explanation for the engineering of the UHDC as put forward by Mr. Fouche to so that it is considered with the same fairness as the often thrown but lacking BBD LTA hypothesis as learned from our discussions.

## 5 TR3-B Magnetic Field Disrupter engineering?

An interesting presentation regarding presumably leaked government information about UHDC was presented by Edgar Fouche in 1998 [16], in this section we will examine the credibility of those claims. Mr. Fouche stated that BBDs in the US governments possession were allegedly capable of reducing the gravitational acceleration of the craft towards the center of the Earth by a factor of 89%, which is a physical impossibility using Newtonian Mechanics. The alleged reduction in gravitational based acceleration was said to be accomplished by a plasma-filled accelerator ring termed the ‘Magnetic Field Disrupter’ (MFD). The purpose of the MFD was allegedly to create a ‘magnetic vortex field’ which disrupts or neutralizes the effects of naturally occurring gravitational fields induced by the presence of matter. The alleged plasma in question was said to be mercury based, and pressurized (p) at 250,000 atmospheres ( $1.013 \times 10^5 Pa$ ) and a temperature (T) of 150 K (Kelvin). The mercury plasma was then said

to be accelerated to 50,000 rpm to create a super-conductive plasma for the purpose of inducing an engineered disruption of the Earth's gravitational field.

There are however a number of physical errors associated with the claims of Mr. Fouche which we will examine. First by means of the ideal gas law an increase in atmospheric pressure will nullify the effects of a low temperature state consequently meaning that low temperature superconductivity would not be physically possible. Next mercury or Hg is claimed to be a plasma at 250 kilo atm, which is pure non sense because mercury can only be a plasma above 327K, and not at the temperature and pressure given. At the p and T claimed by Mr. Fouche Hg would transform to a solid phase and would therefore become a solid metal because its temperature would be below Hg's boiling point of -34.84 C, the best case scenario for this is argument is that it may exist as a crystalline structure. A tantalizing issue which may jump out to a skilled researcher (or chemist) is what happens when you compare Mr. Fouche's claims to a sample of mercury at 1atm pressure and 1K, where the difference between molar masses can be seen with

$$\frac{1mol m_{Hg}}{(2.5 \times 10^5 atm / 150K)} = 0.11 gK/atm$$

meaning that the mercury within the MFD would be 89 times as dense that found at 1atm at 1K. The above formula however also shows that room temperature Hg would be 66.34 less dense than that of the 1 K variety, which is in clear disagreement with Mr. Fouches claim (suggesting a possible understanding of mathematics but not one of physical units). The above result begs one to ask if the numbers used were conjured up by information given by another source or do they simply show a complete misunderstanding of basic chemistry.

Playing devils advocate let us imagine how such a set up could be hypothetically arranged (although based on classical textbooks on chemistry and physics such an arrangement shouldn't be at all possible). As mercury is a metal we can safely assume that valance electrons move through the solid lattice of the metal. We now make the problematic argument that cations could remain relatively stationary at a central core, yet allow electrons to freely gain energy from the forces imposed by high external atmospheric pressure, acting as a plasma in that sense. The existence of a 500,000 rpm revolution ring however is rather meaningless for the parameters of a particle accelerator as they alternate the polarity of magnetic fields in order to accelerate particles. So we now must assume that only magnetic fields can impose dynamical change, we now will presume the accelerator could only be a stationary ring of segmented magnets with permanent polarity, but the Hg pseudo plasma rotates on an internal torus, so that there can be a change in the magnetic field strength of the Hg lattice structure with an electric frequency of  $8.3 \times 10^3 Hz$  to simulate 500,000 rpm of the torus.

Essentially what our rotating torus would entail is that you have a solid Hg plasma (which would act like an exploding superfluid) behaving like a giant atom condensing into smaller units, with positive charges (protons) residing at center and negative charges (electrons) filling the outer torus, hopefully causing

the high pressure electrons to simulate what are known as Cooper pairs. Generically Cooper pairs are extra electrons which can entangle themselves within an all ready filled energy level of an atom because they posses different spins than the native orbitals thus satisfying the Pauli exclusion principle. Now this is interesting because the alternating magnetic polarities could in principal cause the Cooper pairs to spin in different directions, simulating a 2 spin vector, which theoretical gravitons (the supposed quantum carrier of gravitation) should have. This would mean that it could be possible to simulate a dipolar (unphysical) gravitational field in the direction in which the torus spins, in this case only horizontal rather than vertical gravity would be felt, because the horizontal component maintains its quadrapole (natural) gravitational field of General Relativity (GR). However effectively if vertical gravity could be reduced it would be limited to 1/1000 of the atomic nucleonic mass in question, in which case you end up with gravity reduction but not in any appreciable amount. This discussion seems all but luna criss until you consider the fact Podkletnov [38] essentially created a similar scenario under laboratory conditions, in which a superconducting material emanated a field that appeared to create a column of gravity reduction. It might not be unreasonable to presume that the two superconducting principles discussed could be related in that the Podkletnov experiment yielded the same result, but simply had a different deflection angle with Earth's vertical gravity field. These what if's sound very tantalizing and are even possible on the very remote fringes of modern theoretical physics, however using the simple quantum formula  $E = nhf$  it would take just over 10,000 moles of electrons acting as a single wave function to produce only 1 joule of this gravitational energy. So the fact that this hypothetical technique would require 10 kg of Hg acting as a single atom to produce a  $1.12 \times 10^{-17}$  kg reduction in mass amounts only to a subtraction of 400 million Hg nucleons from the 10 kg mass, making this method highly inefficient, resulting in a  $1/10^{-37}$  of a percent reduction in overall mass.

We can sum up Mr. Fouche's claims as incorrect bad science, but interesting in that these numbers do not seem to be conjured up arbitrarily but seem to be tied to real physical constants, somehow. It would be a rather staggering coincidence that if the numbers where chosen arbitrarily that Hg excited at  $f = 8.3 \times 10^3$  Hz would roughly reproduce the well known strength differences between the electromagnetic and gravitational forces which are traditionally represented by the power notation  $10^{42}$  N. The data revealed by Mr. Fouche is easy to reject by textbook reasoning, yet on the other hand there is something unsettling about the numbers as if though they were pieces of a larger picture. The real question however is not which preexisting hypothesis best fits the possible origin for UHDC. But the proper quest is to find an un bias hypothesis which could best describe the basic operation of the crafts in question, now with the background material out of the way we will now explore the attributes which this manuscript has been leading towards.

## 6 Physical Anomalies

Our summary of the UHDC pattern thus far has yielded only a few clues, they are large, capable of high acceleration, can maintain a stationary position at altitude, and they appear to have numerous lighting sources. But since optical identification is very limited in scope an open to interpretation by the witness in question we will now examine some of the secondary effects which UHDC are reported capable of producing. There has only been one case where a scientific instrument has recorded information regarding the properties of the craft, specifically their magnetic field and publicly reported [26]. But there have been numerous cases regarding the disruption of electrical equipment such examples include radio frequency interference, and Cathode Ray Tubes (CRT) interference, and other effects such as compass needle movements. The degree and magnitude at which the described devices were disrupted could also be considered crude scientific instruments in themselves even if not initially recognized by the witness in question. So in order to deduce the engineering behind these craft we will examine what can be concluded about the disruption of common objects in regards to the physics behind UHDC. What is even more remarkable is that there have been reports of far more exotic behavior which were allegedly performed by UHDC, including the ability to separate, control and re attach a sphere of plasma. Another exotic performance is the apparent ability of the craft to seemingly condense their ionization lighting sources into a single source after which the UHDC disappear from sight [22]. The deltoid craft have also been reported to be capable of controlling the linear length of what appears to be a beam of laser light at will. So we are left to ask ourselves if a large portion of these FT reports are reliable than how can all the fragments of information discussed within this manuscript be put together in order to explain the operations of these craft?

Let us begin by diving into something relatively easy to explain, acceleration, the author has observed one such craft rotate in a stationary position at roughly 105 kph (65 mph), and several other sources report much higher accelerations [19]. A 105 kph acceleration is not unusual in itself, but now consider the force that would be required to move a UHDC using the Appendix B acceleration along with NIDS postulated 90 metric tons mass [12]

$$F_{thrust} = (90k \text{ kg})(31.69 \text{ m/s}^2) = 2.85 \times 10^6 \text{ N} , \quad (9)$$

which is over 20 times the thrusting force of a Saturn V rocket! In other words the author's own observation clearly demonstrates that chemical propellant can not sustain the reported maneuvers of a UHDC, and with that much thrust being expelled at tree top level would certainly result in a tremendous roar and yet no such roars have been reported with these craft. A Police Officer in Illinois reported that a deltoid craft transversed a distance of 6 miles within 4 seconds [19], a NIDS survey only simply estimated an acceleration of several hundred g's, which anyone whose been on a roller coaster could estimate. But the Illinois Police Officer acceleration would roughly translate to 2,414 m/s (7,290 ft/s) or 246 g's! Since its widely accepted that no human could withstand

an acceleration of 10 g's it certainly rules out the possibility of human pilots aboard UHDC, unless somehow some government has mastered and can control the force of gravity. Although the author's observation along with the Illinois Police Officer's observation may be consider simply subjective to some, the Belgium Air Force has publicly released a report stating that radar lock ons of a UHDC in 1990 recorded accelerations in excess of 40 g's. Another issue with these particular craft is that they are routinely reported to be capable of breaching the sound barrier without producing a sonic boom. The absence of sonic booms reported from supersonic flyby craft transversing great distances is no longer remaining the conundrum that it was in the past as a number of organizations have recently reported that by changing an aircrafts aerodynamic profile in flight can prevent the formation of sonic booms [30]. Essentially what the above preliminary data suggest is that UHDC if were chemically propelled they would carry more fuel than orbital rockets, and that they can out perform NASA's most powerful rocket engines and do so at an extremely low decibel level.

We now return to the anonymous 2002 NIDS report a possible stealth blimp impulse ratio was given as 1.06 to 1=10.39  $m/s^2$  for vertical lift and 1.78 to 1=17.44  $m/s^2$  for total thrust [12]. Since specific impulse is given in terms of

$$I_{spc} = \frac{v_{exh}}{g}$$

meaning that any value of  $I_{spc} > 1$  translates into an exhaust escaping faster than the downward pull of gravity. The problem with specific impulse treats a force acting on a body in terms of  $J = \int_0^1 F dt$ , to make use of this equation requires that one knows how the momentum of the system has changed, and this can only be given if initial UHDC mass along with the spread and type of propellant used were known. So the thrust data used by the NIDS report may sound impressive, but it' meaningless, it's like knowing the power of a small heater but not the size of the building in question.

## 6.1 Magnetism and Radiation

There are numerous reports of UHDC interfering with electromagnetic fields, including the disruption of magnetic fields in a periodic manner and one report regarding high levels of radiation without ill effects. The most interesting account regarding radiation and UHDC comes from a Sgt. Stone whom made the statement that geiger counters measured high radiation pegging the scales but no secondary sicknesses were reported [33]. There is a well known form of radiation which can be present at high levels and not affect a human being and where even a single sheet of paper can usually provide an affective shield, it is known as beta (electron) radiation. It's hardly surprising that beta radiation would be present in high amounts due to ionization often reported by the ventral 4.5 diameter glowing apex domes, another bonus is that perhaps this might also give some insight into the primary propulsion system as well. What is also of relevance from Sgt. Stone's interview is his correlation of electromagnetic



interference with other reports, specifically dealing with the performances of walkie-talkies:

Our radios didn't go dead. There was a lot of static, but they did not go dead. We could alternate channels on our radios. And we had I think we had 4 or 5 different ones we were using. As long as we alternated between those 4 or 5, we could go ahead and communicate.

Sgt. Stone's account simply reported that some signals were usable and others were not, in order to get any affective use of the hand held units required a cycling of the available frequencies. An interesting article dealing with the magnetic field properties of these craft were given using a magnetometer [26]. The reported magnetometer readings were vague, but appeared to have a four cycle period with two high peaks, and two low peaks, typical of a Fourier square potential. Secondly the magnetometer read values for the low peaks in the Extremely Low Frequency (ELF), which is typical of household wiring (and hence should have been detected no matter what), and then the high peaks were off the scale suggesting a different frequency, correlating with Sgt. Stone's frequency cycling account.

Another interesting find from the Ray Stanford magnetometer reading [26] was that before hand he noted an optical oscillation of 10 Hz surrounding the craft in question, close to humming frequency heard by the author of this manuscript (see Appendix B). What is also worth of significant notice is that the oscillation described by Ray Stanford were appear to be a more detailed description of what was reported the FAS reported in their summary <blimp.htm> [29]. Further the oscillations discussed have been reported quite frequently by witnesses who have been in close enough proximity to the craft to make out some of the fine details of the crafts ventral surface. Since conventional LTA technology has been ruled out in section 3, we now question the original FAS of interpretation this effect. Oddly enough a geologist has photographed such anomalies produced by similar craft, but interpreted them as the signaling of an advanced civilization [18]. Based on our analysis so far it might not be unreasonable to hypothesis a field drive, for argument sake let's just say that UHDC can behave as though they used magnetic propulsion. In other words it may be likely that the reported 10 Hz frequency generated by the craft could represent the properties of an engineered force field, a similar conclusion was reached by Paul Hill much earlier [4]. In order to deduce the properties of the possible force field let us examine the well known anonymous photo of a UHDC taken in 1990 over Belgium (see photo in Appendix D). We now place a crude contour map of of the ionization wakes near the apex of the delta and by also outlining the apparent existence of lateral oscillation of the apex lighting sources, which gives clues to the behavior of electrons within the atmosphere (see figure 2).

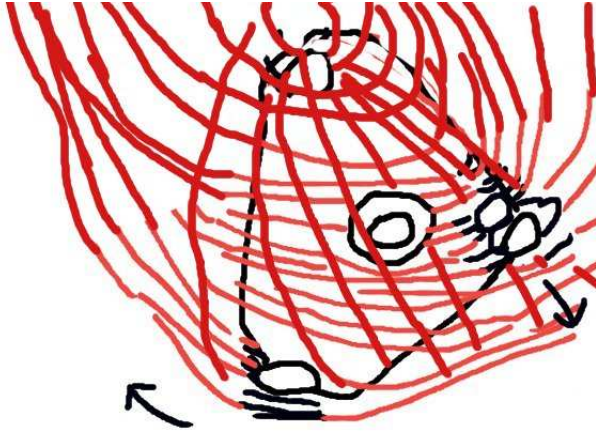


Figure 2: Electrical Contour Map of a UHDC as extrapolated from a 1990 photograph

Figure 2 gives us further clues to the behavior of the ionization wake created by the craft, the most obvious is that the left aft lighting (of the craft) is descending and the craft is rotating to its right (as shown by black arrows). The figure also demonstrates a gradient which truncates just behind the aft of the craft and decreases and levels out near the fore apex of the craft. This UHDC field is interesting in that it suggest the external field gradient of the craft may be correlated to its reported low speeding maneuvering, where the craft is angled downwards yet moves forward as described in section 2.1. Even more interesting is that the imposed gradient tends to back other reported behavior of the craft, the field gradient could easily produce the sheet lighting effect associated with the craft. And a second attribute would upon the introduction of a large charge electrons would rush to the fore of the craft reproducing the reported light beam extending from the fore of the craft prior to rapid acceleration. The data collected thus far seems to strongly suggest the use of some form of a field drive, rather than conventional LTA, and fueled based technologies, the next logical step is to attempt to describe the properties of the field in question.

## 6.2 Properties of the UHDC external field

The best collected data researched so far which suggest what may be the properties of the apparently existing external field stems from reported magnetic anomalies. The problem with the magnetic anomalies data is that they are poor as often the magnitudes are not known, but we can make approximations as to the likely effects of such scenarios. Let us assume that a standard navigational compass deviates by a small but noticeable amount, we will argue for a +/- 20 degree deviation for an arbitrary magnetic needle. This tells us the relative strength of the field in comparison to Earth's magnetic field being  $0.5 \times 10^{-4}T$ , similar principles are also used to measure the drift of

Earth's magnetic field due to geological activity. Since many alleged reports of UHDC only make mention of magnetic interference when at tree top level (for our case let's say at 21 m (70 ft)), we should be able to make a reliable calculation of how much weaker the field would become by time it reached a compass on the ground. The problem is that one can not know the magnetic strength of the field in question without knowing the strength of the current in question, as the strength is given in terms of  $F_B = IlB \sin \theta$ . But we can estimate the current from what meteorologist call fair-weather conductivity which is roughly  $3 \times 10^{-12} \text{ Amp}/m^2$ , for the area of a UHDC that translates to a current of  $I_{UHDC} = 3 \times 10^{-12} \text{ Amp}/m^2 \cdot 68.7m^2 = 1.42 \times 10^{-8} \text{ Amp}$ . If we take the estimated craft current, we can calculate the a circular magnetic strength with  $B = (\mu_o I_{UHDC}/2\pi r) = 4.13 \times 10^{-17} \text{ T}$  giving a maximum force of  $F_{max} = IlB = 4.03 \times 10^{-23} \text{ N}$ , confirming our earlier magnetic strength:

$$B_{max} = \frac{F_{max}}{1.42 \times 10^{-8} \text{ Amp} \cdot 68.7m} = 4.13 \times 10^{-17} \text{ T} .$$

The above result means that the magnetic field strength of this craft as it passes through the atmosphere is roughly ten trillion times weaker than the Earth's magnetic field. In short is is very suspect that this craft could cause any interference with a ground compass, the only way this could occur is if there were a large flowing charge current nearby, or that if the craft were producing large amounts of charge itself which is unobservable to the human eye. The possibility that large current charges may exist without being observed is not an unlikely scenario as Ellen Crystal has taken numerous photos of UHDC-like objects, but after development the films were found to be over exposed with Ultra Violet (UV) radiation apparently sparking beneath the craft [5]. What is also relevant from Ellen Crystal's account is that the UV exposures only seemed to display when the craft was in hover mode, and that the optical orangish glow sometimes reported may be the result of a power down. The power down scenario is also plausible from a physical perspective as it would cost less kinetic energy to move forward rather than hover because of the force of gravity, for a more thorough explanation see Hill's book [4]. It is however impossible derive any more information regarding the magnetic properties of the craft without having proper scientific equipment to take such measurements, although there is some weak subjective evidence for the presence of a field of some kind.

### 6.3 The Cornet Anomalies

A number of explanation for the reported behavior of UHDC have been reviewed thus far, and not a single one appears to have a very high correlation with the known reported data. We end now by considering data put together by Bruce Cornet on this subject, this makes matters easy for because there was an attempt to relay the data scientifically. The data which is of significance to this manuscript is that of an audio analysis of an unconventional aircraft, which may or may not be UHDC related, along with photographic evidence of a reported vortex wake [17]. Cornet's audio findings are interesting in that audio

tracks recorded a jet engine like sound which which did not produce the full spectrum of frequencies associated with normal jet aircraft. The frequencies reported by Cornet were 150 HZ – 2.5 kHz suggesting that the sound was either artificial created or represents a form of next generation avionics technology. Most surprisingly Cornet’s audio analysis of the sound produced by the aircraft in question appeared to violate Doppler’s Law by inversely distorting the frequencies in question, leaving only two possible conclusions, either the sound was artificial for camouflage purposes, or that the craft generates an unknown reaction with the atmosphere. The second and most striking anomalies is that Cornet captured an image showing how a high velocity deltoid aircraft distorted the local atmosphere [17]. Cornet points to the fact that the wake appears to expand the atmosphere at the crafts fore end and compresses the atmosphere behind it.

## 7 A possible practical field drive?

Now we will examine a possible field drive which could possibly explain how a UHDC could be capable of high accelerations, hovering, and operate silently using a relatively small amount of fuel. Using the minium energy of 67 KeV to ionization atmosphere as noted early we can also estimated the general electric flux produced by that craft

$$\Phi_{ion} \cdot r_{UHDC} \simeq \frac{4\pi\epsilon_0 r_{UHDC} \cdot 1.07 \times 10^{-14} C}{q} = 5.10 \times 10^{-04} Nm^3/C . \quad (10)$$

Since  $\Phi = EA$  we can very haphazardly\ attempt to approximated the magnitude of the electric field produced by the ventral domes around the the craft by taking

$$E_{ion} = \frac{\Phi_{ion}}{3A_{dome}r_{UHDC}} = 1.22 \times 10^{-7} N/C . \quad (11)$$

From  $E_{ion}$  we can figure the rate at which electrons should accelerated from the ventral ionization sources which gives

$$a_{ion} = \frac{F}{m} = \frac{qE_{ion}}{m_e} = 21.45 \times 10^3 m/s . \quad (12)$$

While the acceleration rate of the ions are substantially they fall far short of the force required to counter act the  $8.82 \times 10^5 N$  downward force of the proposed craft’s weight [12]. While a field of some sort may be imitating from the craft the data on their true magnitudes are inefficient at present to make detailed calculations regarding their possible possible properties. But it is safe to conclude that the craft’s external ionizations are far too weak to produce conventional atmospheric thrusting. On the other hand the ionizations present are more than likely to generate large but confined amounts of beta radiation which would be quite capable of producing often reported schwoose sound associated with the craft

as a secondary effect. And lastly if the electromagnetic fields discussed within this work are in deed present than from the Lorentz force we can expect nearby atmospheric particles to have a velocity near  $v = E_{ion}/B_{max} = 2.95 \times 10^5 \text{ m/s}$ . The existence of Lorentz force accelerated particles would also mean that UHDC would generate secondary electromagnetic fields by their presences which would alert one to their location.

While the reported physical anomalies generated by UHDC are insufficient enough to produce electromagnetic thrusting, that does not necessarily rule out the use of field propulsion. A proposal put forth by an Todd Desiato of Delta Group Engineering has envisioned how a setup may be possible if a lot of power were applied to a large craft. If one were to were to have to two triangular shaped antennas parallel to separated, one could cause the antennas to produce constructive interference below the craft and destructive above it which would result in the Lorentz force providing upward lift (in other words Desiato's proposal takes the electronic interferences we have been examining in this section and puts them into a more unified frame work). In the case a UHDC their reported size would require electromagnetic radiation within the microwave wavelength. Although since the power and charges needed to recreate this plausible form of a field drive would require much higher electric field strengths than data from UHDC reports indicate were present at the time.

## 8 Motivations for Secrecy

"They only have one policy – deny everything." –Mr. X from the X-files television series

In contrast to the open 1990 investigation of a UHDC by the Belgium Air Force the US Air Force (USAF) has not only had no open investigation into purported descriptions of such craft but has gone as far as denying that any inquiries of such craft were made by first hand witnesses. One such example was the reported anomalous "Phoenix Lights" event during 1997 in which Luke Air Base reported on the record that there were no calls regarding the anomalous event, but the phone records of one eye witness provided evidence to the contrary. A similar evasiveness regarding large deltoid aircraft was again facilitated by Scott Air Force Base in Illinois after the 2000 Shiloh Police sighting as shown by letter received by the Illinois Mutual UFO Network (IMUFO). The prior mentioned incidents brings one to ask why does there exist an evasive behavior in regards to UHDC to begin with by the USAF in general. Obviously there is an unbeknownst reasoning for this evasive behavior by the upper USAF brass which the common citizen is not prevue to, perhaps with good intentions, perhaps not. An example of a not so good intention for USAF evasiveness are those who claim that U.S. government in some form (namely a group called Majic as investigated by Stanton Freedman [9]) has in the past salvaged technology from advanced technological civilization(s). In Particular for the purpose of this manuscript there exist an alleged Majic Document which apparently describes the modern UHDC pattern, one passage reads [24]:

This craft is believed to be new technology due to the rarity and recency of the observations. Radar indicates an isosceles triangle profile, the longest side being nearly 300 feet in length. Little is known about the performance of these craft due to the rarity of good sightings, but they are believed capable of high speeds and abrupt maneuvers...

which is startling since the document was allegedly typed up in 1954. However the supposed Magic Document didn't publically appear until 1994 and the information could have been easily gathered from other FT flaps and forged. The fact that passage reads that the radar confirms a 300 ft length is very suspect since modern radar can only extrapolated relative cross-sections of contacts rather than actual physical lengths of objects. Even if the alleged Majic document was forged its disturbing in that it suggestion courses of action for the denial of certain phenomenon and actions to take to discredit those who come close to discovering the truth. Clearly if you have an technological advantage over a possibly perceived enemy you wouldn't want any information about such an aircraft leaked out. But if the USAF was attempting to keep the craft in question secret than why have they been reported flying low over highways [36], airports, civilian homes, and nuclear power plants? And of equal weight if there were craft of known or unknown origin which could evade your defenses with impunity would anyone want to admit that potentially embarrassing fact?

## 9 Closing remarks

This manuscript was written in the hopes that it could help solve the so called FT Mystery, but our survey thus far has only served to provide more questions than answers. What we have found in our survey does however provide many clues as to the potential propulsion system in question. We have learned that the dimensions of UHDC could not possibly provide support that LTA technology could be used to maintain the altitudes of the craft as often claimed by skeptics. Furthermore if the craft were operating using chemical propellent the fuel requirements would be enormous only allowing for a few minutes of operational flight, the craft also seem capable of accelerations which would kill a human pilot, unless some force were countering inertial accelerations. It is however possible that the craft employ field some form of emf propulsion, such concepts have been explored in recent times by aerospace engineers, the MDP2 proposal for example. It may not be unreasonable to presume that if field propulsion research was conducted with black project funds that usable versions of what are being proposed in present times may all ready be operation by the military. The most likely scenario within in reason is that some research may have been conducted in the past along the lines of the Polarized Vacuum spacetime engineering schemes as proposed by Puthoff and Ibison [39], and succeeding at some level. In these models ordinary electromagnetic fields can be engineered to simulate gravitational potential energies which may also explain the many reports of the downwards angle movements of UHDC. It may not also

be unreasonable to assume the reason why high amounts of electromagnetic disturbances were not reported because the primary fields of the craft are primarily contained within the hull of the craft. Contained engineered propulsion fields also suppose the existence of an on board reactor possibly nuclear, which might also help to explain the ionizations often associated with these craft. The exact nature of the propulsion systems of UHDC may not be known without further investigation, but the properties indirectly deduced from this manuscript would certainly provide the motivation necessary to hold such technological advances in secret.

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## Appendix A: The UFO Problem in Scientific Analysis

The fact that a craft can not be identified with a group of known aircraft type or of national origin does not make them any less real as is often argued in the case of UFO's in general. For example a burglar attempting to rob a bank may in fact be unidentified, but that does not take away from the fact that a burglar has committed a crime and may leave behind clues to his/her identity in the process. Yet classifying an object as unidentified has stalemated any real scientific process with the so called UFO phenomena, just imagine that chaos that would ensue if law enforcement agencies failed to follow clues left behind by unidentified criminals. The current justification behind the lack of investigating of the UFO phenomena by the established academic scientific community has been that something which is unidentifiable can not possibly conform to the tested principles behind the scientific method. One of the major paradigms in the scientific method is that to have testable and repeatable procedures from which a hypothesis could be verified or rejected in regards to describing a particular behavior at hand. With UFOs the scientific process seems almost impossible, as at first it seems impossible to make testable predictions about objects which

can't even be identified. The previous logic also applies itself to self proclaimed UFO\*logist (after all from its partial latin name sake, how can one really seriously study something that is unidentified?), i.e. the whole unidentified portion of the acronym is the sole reason for stalling any scientifically peer established research methods into the subject at hand. In reality the unidentified aspect of UFOs in general can be easily rectified by introducing varying classifications and subclassifications of the phenomena, just as the biological sciences are treed under varying classifications (e.g. FTs, flying saucers, cigars, meteorological, engineered craft). While a collective classification system would help to focus the varying aspects of the research field, the present UFO nomenclature classification scheme is in reality acts as an excuse to avoid the topic and does not at all represent a bona-fied means of scientific elimination. The reason for this is rather simple, whether scientists like to admit or not, the acronym UFO has not come to mean unidentified terrestrial objects, but spacecraft originating from an Extraterrestrial Intelligence.

While UFOs are generally scoffed at in scientific circles, they've been none the less been investigated by some well known academic institutions. The earliest and perhaps well known investigation into the UFO phenomenon was carried out by Colorado University [2]. The Colorado University hence fourth has been known as the Condon Report as Dr. Edward Condon headed the Colorado University Research. The Condon Report concluded that while there may be something to UFO reports, there was nothing of value in which to forward scientific endeavors. While the Condon report is generally regarded as the foremost in depth professional investigation of the UFO subject, it is no more than a statistical analysis of a speculative phenomenon. The early statistical speculation of the UFO subject has prompted a number of so called UFO researchers to denounce the Condon Report . A similar European investigation organized in the same fashion as the Condon Report however conclude that in contrast useful scientific data could be obtained from analysis of UFO areal phenomena [7], although surprisingly a more detailed analysis of the subject was carried out in the Condon report. Amongst other problems there are some individuals who claim to scientifically analyze reports of UFOs from a scientific perspective, but in reality simply give hypothesis regarding objects rather than carry out analysis with known scientific principles [6]. To date the most thorough physical study of the UFO subject was carried out by former NASA engineer Paul Hill in his free time [4]. Hill concluded that if the reports of the UFO phenomenon were accurate that the observations of unconventional flying objects suggested that at a majority of them generate a force field either as a primary or secondary mechanism in order to propel themselves in the atmosphere. The possibility of the existence of Extraterrestrial (ET) Intelligence has even been explored by well known scientific giants such as the late Carl Sagan, and argue very strongly that they do exist. However in regards to ET's visiting Earth Sagan rejected this notion by suggesting it is unlikely that they would just suddenly arrive to Earth during present times without us achieving a similar level of advancement [3].

Thus the present discussion underscores how present scientific investigations

into the UFO subject are carried out which can be classified into three subgroups. The three subgroups in regards to UFO investigation are i) the conservative paradigm-ist, ii) the liberal paradigm-ist, and the iii) intermediate paradigm-ist, where the paradigm is the proven or accepted model of scientific explanation. The prior three subclassifications however in fact apply to all of the physical sciences and not solely to UFO investigations. For example subclass i) holds that all we know is the current explanation, ii) holds that the current previous assertions are only nearly close and require a yet unknown modification, which might be regarded as the experimentalist approach. Finally subclass iii) holds that our current assertions are probably close to the truth but are only a subset of a larger truth. In simpler language subclass i) abides by standard models, ii) requires a standard model which is modified, and iii) requires that any standard model is only a subclass of a larger model. So by over viewing current scientific reasoning the possibility that UFO reports could be related to an ET Intelligence (ETI) are reasoned with afore addressed subclasses. i) ET's can not be related to UFOs as they do not confirm to our established scientific models. ii) ET's may or may not be related the objects reported as UFOs, there is no hard either way. iii) ET's may or may not be related to UFO's, although they couldn't defy our scientific models, but may ascribe variations to our models.

## Appendix B: Author's Observation of a UHDC

"And then something happened, something that I knew was impossible, but it happened anyway." –Agent Smith from the 2003 film: The Matrix Reloaded

This appendix section is separated into two parts after this brief introduction, the first half describes a sequence of events (S1-S5) involving my observations atmospheric illumination which is consisted with world wide reports of what are presently described as Flying Triangle (FT) craft. The second half of this appendix briefly describes how the physical characteristics of the UHDC how were determined, while such determination is easy for a trained observer it is much more difficult for the layman due to generalizations. It is hoped that a brief description of how physical properties of an object based no more than relative, position, timing between events, and lighting can help determine the size of an object, its speed and other possible characteristics which could be cross-referenced with other natural or unnatural characteristics for determining the properties of an unknown object. The sequence of events described below occurred over Springfield, Illinois (USA) on April 22, 1994 around 1:40 am CST after the author was awoken by a sound presumed to be from an approaching F-16 fighter jets stationed at the local Illinois Air National Guard base.

S1) Aircraft (jet) like rumble (muffled [low decibel] after burner like sound) heard, in the direction of the sound white and red flashes (resembling aircraft beacons, in color and pulsation) were seen through a cloud. The flashes themselves were however in appearance more similar to sheet lighting rather than

flashes from light bulbs, the pulsation period lasted approximately 6 seconds. For precession the beacon-like pulsation differed from conventional aircraft in the following way, an initial dull emission lasting 0.5 seconds with a slightly brighter flash directly following lasting 0.5 seconds later and then resting for 1 second.

S2) Following S1) A 1.2 m (4 ft) orange-red (amber) plasma with a spherical diameter pulsating its radiate intensity (dull to bright) at 2 Hz oscillation began to descend from light cloud (contrary to the expected F-16) cover to tree top level, looking much like [27]. The spherical plasma then descended in stair step like pattern (stark effect), and moved out of sight. Initial calculated altitude of amber plasma sphere was 442 m (1,450 ft), duration of observation was approximately 45 seconds.

S3) Following S2) and perpendicular to and relatively closer to my position than the plasma ball were observed 3 circular light ionization sources (white) approximately 4.5 m (14.7 ft) in diameter separated at a distance of 45 m (148 ft) The 3 white ionization sources were arranged in isosceles triangle formation moving uniformly and not illuminating the ground below. At first the three lights appeared to be a formation of fighter planes, until one of them reversed direction relative to the other two, suggesting a rotating maneuver of a single large (50+ meter) craft. Based on the lower limit craft size and that it made a 70 degree rotation in 2 seconds means it moved with an angular velocity of 31.69 m/s (103.94 ft/s) corresponding to 3.23 g's of acceleration. As Earth's atmosphere is largely comprised of Nitrogen gas, for a white ionization effect to occur would require a bare minimum excitation energy of 60 KeV to induce such an atmospheric illumination. The initial calculated altitude of the craft was 4.2 km (13,795 ft) and descended rapidly, observations of the crafts maneuvers lasted approximately 1 minute.

S4) Direct observation discontinued by closing bedroom window blinds, although within two minutes a new sound is heard a low frequency hum ranging from 6-10 Hz (similar to low level electrical activity, not be confused with conventional 60 Hz US power lines).

S5) Directly after S4) multiple (hundreds) whitish-blue laser-like beams were scene though closed blinds and curtains of several household rooms. The beams themselves appeared to be at a distance of 3 m (10 ft) from the outer walls (of a roughly 14 x 30 m (45 x 100 ft) home ) and were approximately 5-8 cm in diameter. The beams also appeared to be grouped in pairs and seemed to be attached to a gamboling system with the ability to move clockwise and counter clockwise (left to neutral to right) with 45 degree intervals, with each interval lasting about 1 second, duration of the event was approximately 3 minutes. The estimation of beam numbers stems from the fact that 6 beams were visible through a 1.2 m (4 ft) window width (or roughly a 20 cm separation) coupled to the dimensions of the home. Another apparent anomaly was that beams which were perpendicular to one another were moving out of sync (i.e. at a different period, such  $1\pi$  and  $2\pi$ ).

## Sequence Analysis

S1 Analysis) While not very telling, reveals a number of the things, the jet engine like sound indicates two things, first the presence of large compressional waves within the local atmosphere. The jet like noise also indicates that a number of frequencies were superimposed, indicating many degrees of moment (e.g. a multitude of mechanical vibration), i.e. some mechanism was interacting with the atmosphere in many different ways audible to the human ear. The lack of a visible aircraft means the vehicle if related to conventional jet propulsion indicates it was operating well below stall speed of a conventional jet craft, and hence represents unconventional propulsion or possibly an effect unrelated to propulsion. The pulsating lighting pattern was periodic in nature suggesting that some mechanism was controlling the amount of atmospheric excitation either naturally or unnaturally. The sheet lightning-like appearance of the lighting also suggests that the amount of excitation was of equal magnitude throughout the excitation region. A possible explanation between the red and white colorization may be that the observed plasma sphere in S2) was reasonable for the visible the excitation and creating a secondary charge redistribution of the cloud inducing sheet lighting.

S2 Analysis) The existence of spherical ball of plasma descending from cloud cover offers one immediate possible natural explanation, the witnessing of how an atmospheric phenomenon known as ball lightning begins. Carrying from S1) it can be concluded that the ball lightning like effect is either generated as a secondary effect of the primary operation of the unknown craft or is a controlled intentional effect generated by the craft of the plasma object itself. The simple fact that the radiant intensity was changing 2 times per second equates to the 2 Hz oscillation. At the least the amber color of the object due to chemical laws strongly suggested the ionization of NiO gas, its duller red color suggest some low level excitation followed by a higher energy excitation (orange). The previous interpretation is supported in regards to the observation of apparently radial confined sparks near the surface of the sphere, indicating a tightly confined flow of charge away from the object. In regards to figuring the altitude of the object the initial distance of the object from ground level was known through terrain landmarks, giving a base length for x of roughly 3/4 mi (3,960 ft), my viewing angle was 20 degrees with a 9 ft elevation, so that  $y = 3,960 \text{ ft} \tan 20^\circ = (1,441 \text{ ft}) + 9 \text{ ft} = 1,450 \text{ ft} (442 \text{ m})$ . The previous calculated altitude is of help in determining the structure of the S3 object, in that since the plasmoid dimension was known relative scales can be determined. On the theoretical side proposals of ball lightning discharge rates do confirm to what was observed, as well as experiments conducted by present laboratories and by Nicola Tesla, giving large weight to the premise that the plasmoid was in fact related to ball lightning phenomenon. Tying sequence 1 and 2 together indicates that some large structure was affecting charge distributions within the atmosphere, furthermore the structure in question was the likely source of the electrical disruption rather than a lightning bolt as suggested by some atmospheric theories.

S3 Analysis) Sequence Three only has bare minimal information which can be deduced, the maneuvering suggested a single large structure, but does not mean that it was, but it is hypothesized that it was a single of object. Shining radiant energy locally but no long ranged suggest an ionization source and not incandescent heating, the white colorization suggest a high excitation most likely stripping electron orbitals from atmospheric gases with a potential energy above 60 KeV. The altitude here was figured in the same manner as in S4, with the formula  $y = 14,784 \text{ ft} \tan(43) + 9 \text{ ft} = 13,795 \text{ ft}$  (4.2 km). Using the Pythagorean theorem  $h^2 = x^2 + y^2$  it is possible to determine the distances between the ionization sources, since the lights appeared to be about 4 in apart held at a 6 in distance, accounting for the inverse square law,  $\text{scale} = 4 \text{ in} / 6 \text{ in} = 0.11$ ,  $(\text{scale} * h) / 12 \text{ in} = 187.12 \text{ ft}$  (57 m), where  $h = 20,217 \text{ ft}$ . Since the ionization sources appeared to span roughly 1/12 the distances between each other puts there size at roughly 15.6 ft (4.75 m) in diameter. Compared to h of S2) it is 4.80 larger, since the plasmoid appeared to be at a scale of  $12/36^2$  in relative size, it gives a margin of error of my estimates within +/- 8 ft (2.44 m). With the ionization diameters included with there separation distance gives a minimum length for each side of the deltoid as 225 ft (68.7 m). What is rather remarkable from the ionization requirements in the analysis in regards to Analysis 2 is that, is that the Tesla setup required 67 KeV, possibly suggesting the plasmoid could have been created in response to the three 4.75 meter ionization sources. Assuming the ionization sources could be representative a positional pattern of equilateral triangle it is possible to determine the velocity for its 70 degree maneuver through an angular velocity formula  $v = (68.7 \text{ m}) (\sin 67.3 / 2s) = 31.69 \text{ m/s}$ .

S5 Analysis) The white laser-like beam description used above is only useful for analogy purposes but is not physically meaningful as it implies interference. The beams were in fact uniformly parallel just as can be created with high power laser beams possessing minimal radial spreading of the beam, the purpose of this description was solely to contrast incandescent lighting one might expect from a spot light. The reason why the beams themselves could not have simply been laser light stems from the fact that LASER is an acronym for Light Amplification by Stimulated Emission of Radiation, which is a fine description for single frequency beams, such as red, green, and blue (RGB), but a white beam indicates the presence of several interfering frequencies (the electromagnetic version of noise). The only way to create white laser is to generated the RGB excitations separately and then to superimpose them with beam splitters, which would be rather inefficient and would require precession engineering. The most likely explanation however would be that the craft in question possessed hundreds of ion wake generators which as a secondary effect could have been responsible for the production of narrow beams of white light. Perhaps the most likely explanation for the short radial range of the beam (5-8 cm) may be that the particle beam induce wave fronts which may act as a waveguide microwave electromagnetic radiation.

## Appendix C: Physical Constants

constant	value
$\rho_{air} = 1.291 \text{ kg/m}$	density
$\rho_H = 0.0899 \text{ kg/m}$	density
$g = 9.8 \text{ m/s}^2$	gravitational acceleration
$q = 1.602 \times 10^{-19} \text{ C}$	electron charge
$\mu_0 = 4\pi \times 10^{-7} \text{ T} \cdot \text{m/A}$	permeability of free space
$\epsilon_0 = 8.85 \times 10^{-12} \text{ C}^2/\text{N} \cdot \text{m}^2$	permittivity of free space
$m_e = 9.11 \times 10^{-31} \text{ kg}$	electron mass
$1.67 \times 10^{-27} \text{ kg}$	proton mass

conversions/ measurements	description
1,000 kg	metric ton
1ft=0.3048 m	length
2,000 lbs=1 ton	imperial ton
2,000 lbs/2.205=907.02 kg	metric mass
1 knot=1.85 km	distance
1km=0.62 mi	distance

## Appendix D: 1990 Deltoid Craft Photo



Figure 3: Triangular Aircraft photographed over Belgium skies.