The drone photo showing the drone just to the right of the top of the power pole was imported into ACAD products and engineering analysis was done to try and find the design criteria for the object. It becomes immediately clear that the object has a very precise design and the design construction was executed with extreme precision.

The first step was to try and rule out a hoax scenario. While we continually see nifty commercials showing a cow with President Lincoln's lips reciting the Gettysburg Address and babies talking like football coaches, there is one simple fact to keep in mind. People start with multiple sets of "photo quality images" and fuzz them together so that the eye has a hard time seeing the separation. This technology has been around for quite some time. If you want to put a P-51 wing onto a 747 fuselage, then one has to stretch each image until the mating point can be fuzzed together. But you cannot precisely change say the ratio of the width of the wing to the length of the wing or induce anything precise about the two images. Of course, this scenario also presumes you had a collection of photos that had booms and details such as the drone to manipulate and the further complexity of the camera angle.

On the other hand, in modern CAD systems we can make very precise drawings. We can create bumps and bosses at say 48 units per 360 degrees and make rectangular ports and all kinds of details and make them any precise ratio we want with each other. If we are trying to model something really complex like a pulp mill tissue paper machine, an object 30 feet wide, 60 feet high and maybe a thousand feet in length, we can get right down to every nut and bolt and this is actually done. I might be quick to add it takes many thousands of man-hours to accomplish something like that. In order to shorten the process a major amount, the nuts are all turned to the exact same position so they can be copied from one flange to another. The ends of the rolls, structural elements and all kinds of details are simply copied from one area to another.

For these and many other reasons the computer model always looks entirely different than a photographic image. Real equipment gets exposed to natural environments and takes on the results of oil spills, lifting cable scratches and all types of maintenance induced marks not to mention operating department calamities such as a hundred tons of wet toilet paper spilled over the sides.

The same is true for an aircraft. Just how do you get the computer model to generate bug guts and bird crap? I believe if someone went to a professional modeling company and asked them to give an estimate of cost to try and produce an image undetectable from a photo they would just die laughing unless you offered them a contract on a time and material basis.

These arguments are sufficient for me to know that the drone images are real and not faked in any way. But there is far more convincing evidence to follow. Unbeknownst to most laymen there are all kinds of standards used throughout various industries to make it much easier to design complex equipment. Of course there are major items but even down to the smallest items like nuts and bolts, there are international standards followed all over the world. So when you zoom in on an image of a 747 wing, you find all kinds of standard shapes and sizes. Even welds conform to various standards.

Welding is something computer models have a particularly hard time making look real. Chamfers on gusset plates and castings are another major stumbling block. It can take man-months to try and impart that kind of detail to a CAD drawing.

One must keep in mind that any type of hoax scenario would mean the drone would have to have been created by a human as we know them. If the human built a small model say like the Star Trek ship Enterprise, there is no way the modeler could get various booms, probes and detail features built with any level of precision. They would build it so that it looked good to the human eye and that would be it. Anything else would cost a small fortune and would have to be machined on a very precise computer controlled three axis milling machine. That would require a very precise program. In all, it would cost millions if it could be done at all.

But there is still another level of complexity to get around. Typically we build things for function only. Within each subsystem, say like a wheel assembly or wing, there are details very telltale of human contribution. As far as I know, we never purposely try to communicate thru the dimensions of the subassembly or between major assemblies. Yet this was done routinely in ancient stone monuments and is done on this drone. The use of phi almost never is purposely used by modern day design criteria and it is used profusely on the drone.

If you think the US military or any other international agency is going to allow something of this technology to float around at low altitudes and be photographed, then you may need to bolster your understanding of military operations. So one might ask just who would allow the technology to be discovered and analyzed as I hope it will be in the near future. The answer seems mostly likely someone who either desperately needs to fulfill some vitally important mission or one that wants to communicate with us on a gradual basis until we wake up enough for more direct communications.

If there is some very important mission like studying earthquake faults then for someone like me to try and determine that arena would require detailed analysis of the drone to see if I can find something that points in that direction. If the objective of the low altitude drone is to communicate some message, then that too requires the same course of action from technical people around the world. Therefore, both likely scenarios initiate the same activities for our human populations.

## General Geometric Features

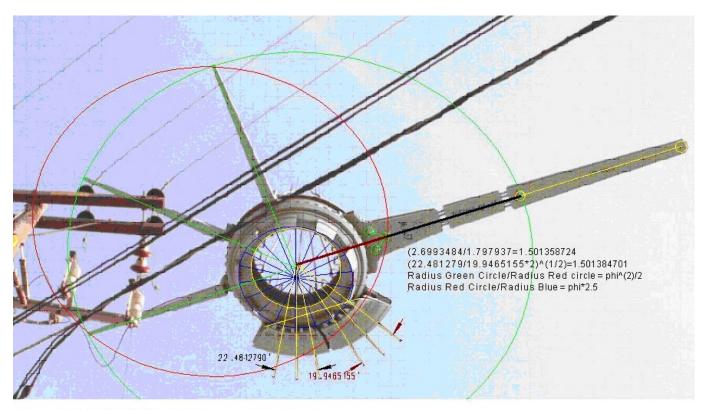
The analysis for this initial paper involves two areas. The first area involves a general overview of the object to see if there are dimensionless ratios that might initiate and perpetuate our interest. Would these ratios suggest typical human contributions or would there be indication of something atypical to human designs? We can't measure the length of the booms because we don't know the precise altitude above the camera, although we can make an educated guess later on from analysis of multiple photographs. But we can compare one dimension with another as long as we take into consideration the camera distortion due to the relative angle between camera and drone. I don't believe this type of analysis can be done practically other than in computer software.

In the graphic below, I have attempted to show how dimensionless analysis can show relationships that may have been built into the design. These relationships might have been intended to lead us to some type of better understanding of the Drone's function and operating characteristics. All the geometry related herein has been corrected for camera angle.

Note the green circle includes the three shorter arms and the larger boss on the extendible arm. Three points determine a circle so this makes the fourth point definitely designed and not likely an accident. The red circle includes two arms nearly at right angles and the inner boss on the extendible arm. Note the three bosses in that group are at 36 degrees exactly from the center line and the cosine of 36 degrees is phi divided by 2. The radius of the green divided by the radius of the red circle is also related by phi squared divided by 2. The red circle radius divided by the blue is phi x 2.5.

Following this type of analysis, one more comparable relationship (of many not included) is shown. Note on the extendible boom that there is a black segment from boss to boss and a red-brown segment from the inner boss to the center of the column inside the drone inner structure. The ratio of these two segments is 1.5013XXX. At the bottom there are two groups of protruding probes with group angles of 22.481279 and 19.9465155. The first divided by the second times 2 and taken to the square root is 1.5013XXX. The picture quality is not adequate to resolve all these relationships to greater precision, but I suspect they are very precise. This suggests to me that there may be some coordinating function between the probes and the extendible boom.

Also note the yellow line across the top of the housing holding the six probes. This line is exactly parallel to the extendible boom. The point here is not to emphasize these particular data relationships, but more to demonstrate an approach other folks can take to determine how this thing was put together. Thousands of technical people working on these images will generate much more progress than just one old engineer.



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From resolution with other pictures, the small arms appear to be able to pivot around the center of the hollow column. The extendible boom seems to be able to move in a radial direction a small amount. Note too that the connections on the extendible boom are tiny shafts. These would not have sufficient strength to keep the extendible boom from collapsing if the vertical thrust was only at the inside of the drone. This suggests that the forces keeping the object in the air are uniformly applied to the entire surface of the object and not some centralized engine such as our technology might pursue. If some idiot pilot attempts to shoot one of these things down, they might be surprised to see the pieces float up instead of falling down.

I noticed that any markings are primarily on the bottom of the craft and not on the fuselage as we do with our aircraft around the world. This suggests that the designers figured the object would be viewed primarily from below and perhaps wanted the object to be photographed. This is just the opposite from what any military might want of their highly technical craft.

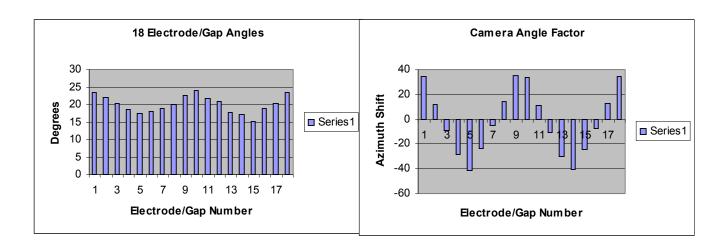
In other photos there are more small booms and they appear thinner. I suspect at least one of the smaller booms can split and the two sections pivot around the center but I cannot find the seam that would allow that to happen. But the connection of the base of the boom to the body indicates that the boom in fact can pivot.

## Detail Analysis of the Core

The second area analyzed so far is the core where there are nine protruding "electrodes" for lack of a better term at this time. I carefully plotted an ellipse around these ends to establish the camera angle and the distortion resulting from that angle. From the center of that ellipse I drew precise lines to the corners of these electrodes. The difference in the azimuth of each line defines the angles that the electrodes and gaps make with each other. The typical person who might try to create a hoax would likely make these angles all equal or of some specific typical arrangement of angles. It is not likely that one would understand the technology required to make these angles fit into a high level mathematical design criteria. And if one did, it seems quite unlikely that sufficient precision could be followed thru on multiple photos and multiple camera angles.

The 18 angles define a very definite trigonometric equation while still using very precise summations for certain groups of the angles. This strikes me as indicating that the object is likely using something like ground penetrating radar to examine geographical structure deep under the surface. The booms can move in a slight rotation mode and the one boom can extend and retract in a radial direction. The dimensionless ratios of these boom elements seem to indicate they might be antennae retrieving the signals sent from the electrodes. Angular and radial adjustments are likely needed to improve signal quality.

The angles prior to optical smoothing are shown in the table below. One can see in the second graph that the camera angle correction is a trig function as it should be. I hope the reader finds it interesting and that more technical people will take interest in this type of analysis. This is a very rare close range photo almost directly under the object. Perhaps others will refine the analysis and make major improvements to the conclusions that can be drawn.



azimuths	angles	ave azimuth	Deviation from undistorted point	angle factor	true angle
90.2339021					
66.8480233	23.3858788	78.5409627	34.7134627	0.900660483	21.0627369
44.9135002	21.9345231	55.88076175	12.05326175	0.964323251	21.15197063
24.6814561	20.2320441	34.79747815	-9.03002185	1.027590381	20.79025391
6.2436345	18.4378216	15.4625453	-28.3649547	1.089253297	20.08345797
348.7245087	17.5191258	357.4840716	-41.3115716	1.132597556	19.84211907
330.7232427	18.001266	339.7238757	-23.5513757	1.073564276	19.32551609
311.9666865	18.7565562	321.3449646	-5.1724646	1.015712045	19.05126005
292.0080676	19.9586189	301.9873771	14.18512295	0.958146892	19.12328867
269.3590654	22.6490022	280.6835665	35.4889335	0.898557845	20.3514386
245.3906955	23.9683699	257.3748805	33.54738045	0.903831505	21.66336783
223.6252213	21.7654742	234.5079584	10.6804584	0.96832155	21.07597771
202.8470113	20.77821	213.2361163	-10.5913837	1.032437586	21.45220497
185.1952218	17.6517895	194.0211166	-29.80638345	1.09399584	19.31098429
168.1826182	17.0126036	176.68892	-40.51642	1.129886424	19.22230984
152.9324145	15.2502037	160.5575164	-24.38501635	1.076265111	16.41326218
133.9398788	18.9925357	143.4361467	-7.26364665	1.022134148	19.4129193
113.5940018	20.345877	123.7669403	12.4055597	0.963299846	19.59918018
90.2339021	23.3600997	101.913952	34.25854805	0.901896244	21.06838617
	23.3858788				

## Speculation

Believe it not there exists from some 80 years ago a very good description of how "ships of the air" may have been designed and operated. In this description the author related how these ships could travel from continent to continent and also under the seas. The methodology fits these drones to a tee. He describes aluminum-uranium alloys and brass temperaments that did not come into existence for another couple decades and then only in the nuclear industry in the form of nuclear fuel rods. I have spent half of my engineering career in the making and shaping of aluminum and I never once heard of anyone even considering an alloy where minor amounts of uranium are introduced into aluminum, but I bet it happens pretty soon.

So who was this dude making all this fuss about "ships of the air"? No one else but Edgar Cayce in some reading in the mid-1930's, I believe. Keep in mind that Mr. Cayce was in fact a human and therefore would likely impart some human characteristics into the readings at times, but many of the almost unbelievable predictions have come true such as the major rivers under the Sahara Desert.

Below are quotations from one of his readings and my comments from decades ago about the statements. At the time I was doing computer expert systems for a smelter in Nevada and so my comments are slanted from my point of view at that time and are shown in blue. The objective here is not to create a link between Cayce and UFOs, but to suggest these things may have been around a long time and perhaps have some connection with the ways of people suggested by the legend of Atlantis. I simply provide the details for those that might be interested.

- "10. (Q) Describe one of the ships of the air that was used during the highest period of mechanical development in Atlantis
  - (A) Much of the nature, in the EARLIER portion, as would be were the hide of MANY of the pachyderm, or elephants, many into the CONTAINERS for the gases that were used as both lifting and for the impelling of the crafts about the various portions of the continent, and even abroad."

At first glance the paragraph above and some of below sounds like the ships of the air were hot air balloons made of animal skins and powered by electrostatic charges built up on the surface. It sounds like the gases were less involved with buoyancy than some type of "absorber of solar emissions, perhaps charged particles". It even suggests intercontinental travel. One should look far back to paragraph T\_0364.004 paragraph 4 where the impelling force is described prior to all the argument about Amilius versus Adam and Eve.

But the details below indicate some advanced technologies.

"These, as may be seen, took on those abilities not only to pass through that called air, or that heavier, but through that of water - when they received the impetus from the NECESSITIES of the peoples in that particular period, for the safety of self."

The above paragraph suggests they were of a different nature if they could pass through water and be propelled in the same manner. And it seems to suggest that the people operating the ship may impart some force to the ship necessary to make it work. We have heard reports of that type of thing from UFO reports but those came much later and the human Cayce would not have been able to hear of it until after the early 1950's. I don't even remember science fiction comic books dealing with a ship being able to do both air and water.

"The shape and form, then, in the earlier portion (of time), depended upon

which or what skins were used for the containers. The metals that were used as the braces, these were the COMBINATIONS then of what is NOW a lost art - the TEMPERED brass, the temperament of that as becomes between aluminum (as now called) and that of uranium, with those of the fluxes that are from those of the COMBINED elements of the iron, that is carbonized with those of other fluxes - see?"

The structure suggested above could indicate that lighter than air ships had significant and complicated metal structure like a dirigible which were abundant in 1932. However, it also could be that the gases were for electrostatic purposes and were not large enough to make it buoyant. Clearly the impelling force was something simple but unknown today. The suggestion appears that the sunrays shining on the craft built up an electrostatic field, which propelled the ship. If the folks had a direct pipeline to the Creative Forces and souls that knew about such matters, there is nothing impossible about these ideas. Aluminum is generally thought quite soft and uranium quite hard. It appears the tempered brass took on the nature of an iron alloy (combinations) which may have contained carbonized elements. In any event, there is some serious metallurgy involved and questionable whether the human Cayce could have read anything like that. In an old 1900 dictionary my dad had uranium was defined as a worthless white metal. If the entity is actually talking about an aluminum-uranium alloy, in modern times that only came into prominence with nuclear reactors much after Cayce's death.

"These made for lightness of structure, non-conductor OR conductors of the electrical forces - that were used for the IMPELLING of same, rather than the gases - which were used as the lifting. See?"

Here the Entity clearly states that the gases were in fact used for lifting but does not really indicate buoyancy. Buoyancy cannot easily be used for impelling. This seems to be fitting in well with what a lot of people have reported about UFO technologies. A very large electrostatic field would explain why cars go dead and lights and power lines are adversely impacted. And what if the electrostatic field induces charge into the salt water and the "like charges" of the water provide the repulsion necessary to prevent huge pressures built up on the undersea ship? In this manner there could be a whole undersea empire and even a base for UFO's well within the modern concept of physics.

"For that as in the NATURE'S forces may be turned into even the forces OF that that makes life, as given, from the sun rays to those elements that make for, or find CORRESPONDING reaction in their APPLICATION of same, or reflection of same, TO the rays itself - or a different or changed form of storage of FORCE, as called electrical in the present."

Clearly the Entity is talking about technology that does not exist today. The alloying of uranium into aluminum may build up some special qualities such that conductance is impeded and electrostatic characteristics enhanced. These special properties seem to enhance or duplicate the Creative Forces. This paragraph too should be studied in finer detail.

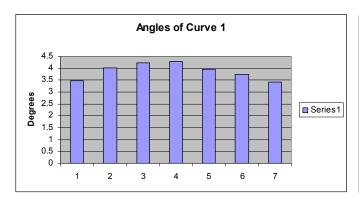
## **Boss Resolution**

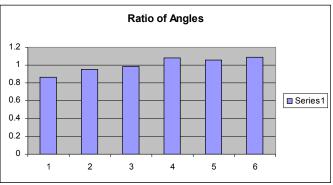
The bosses near the edge of the inner annulus of the drone number some 93 as best as one can count since some are covered up by the electrodes. This number divided into 360 gave a number very near the Mercury/Earth dimensionless number for solar distances and I speculated that there might be other meaningful solar system numbers. Unfortunately I made an error and used a slightly wrong center and that appears to be the wrong direction.

But the bosses that can be measured are in fact placed with some type of numerical system. I did not correct for distortion as that effort seems unnecessary when the raw data is already a smooth curve from two different perspectives. Distortion would change the shape of the curve but not the fact of the relationship. In the first graph one sees the first seven angles developed from subtracting the adjacent azimuths which are from the drawing with zero and 360 being to the right.

Azimuths	Angles	Ratio of Angles
244.2314215		
240.7637938	3.4676277	
236.7505122	4.0132816	0.864037973
232.5292045	4.2213077	0.950719987
228.2501474	4.2790571	0.986504176
224.2839131	3.9662343	1.078871488
220.5413896	3.7425235	1.05977539
217.111653	3.4297366	1.091198519

In the second graph, a compound ratio of the first angle divided by the second, etc was done to see if there was a geometric relationship and the second curve bears that out.





The second group of boss angles is shown in the chart below. This section is substantially more complicated and requires multiple equations to be solved simultaneously. But one can see from the graph below the chart that in fact there are relationships, they are just not in a consecutive order. In analysis on another drone photo, this was the predominant theme for the boss layout for the bosses that were visible.

212.4576546	4.6539984	
208.3665277	4.0911269	flat
204.681179	3.6853487	
200.3565259	4.3246531	
196.2658805	4.0906454	flat
192.9723321	3.2935484	flat2
189.2629617	3.7093704	
186.3118354	2.9511263	
182.6947262	3.6171092	
178.5278906	4.1668356	flat
175.1853556	3.342535	flat2
172.7084995	2.4768561	
169.8705889	2.8379106	
165.1385481	4.7320408	



Green and red lines parallel with each other and blue line multiple of Green Lines

For now it is sufficient to show that there are design criteria for the boss layout and that these criteria are probably telling us something about the function of the drone. Much more analysis will be necessary in order to determine what is going on more completely. There is no doubt in my mind that a great deal can be gleaned from analysis of these photos.

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