

## Eclectic to Esoteric among Friends

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**When in the course of human events, oops, am I reading from the wrong paper? Well I guess this is the correct one as this is certainly a declaration of engineering and clubbing independence. Let's start over again.**

**When in the course of human events it is necessary for one member of the Literary Club to violate the recommendations of this club in order to present information that has been requested by many members over the last several years, it is some kind of an independence declaration. This information has to do with my profession as an aeronautical engineer. I know we're not supposed to talk about our profession in the club papers; however, as it has been requested by several of the members, I'm going to present a summary discussion of some of my experiences in that field. I'm going to keep this as a non-technical discussion, as much as possible, but hopefully it consists of a group of interesting and eventful stories, even if tragic.**

**The first story is about a personal experience. It occurred shortly after my completing college, when I went to work for**

**Boeing-Wichita on the B-47 and B-52 flight testing. Immediately after my arrival, I was asked; nay I was told, to take hyperbaric high altitude training in their chamber. During this training I had to experience the effects of altitude with and without the altitude pressure suit and oxygen mask. Several hours of training under both very high-altitude and rapid descent conditions were required so that I could learn to automatically detect the effect of altitude on my body. This is necessary for safety of flight during the flight testing in which I would participate. This is but one of the several techniques that were required for the personal flight safety check out.**

**At 3 AM one morning I arose, showered and shaved and prepared for a flight test. It was only about a 10 min. drive from where I lived to the Boeing Flight Test Center at McConnell Air Force Base in Wichita.**

**Wichita is an interesting old cattle town that has assumed very modern character. It is now known as "The Air Capital of the World". Several aircraft companies are headquartered in Wichita including Beech, Cessna, Lear, the Canadair Flight Test Center, and the Boeing large aircraft military business. Also in town is McConnell Air Force Base.**

**The Boeing Flight Test Center was on the west side of the**

**McConnell Air Force Base field and the Boeing manufacturing plant was just west of that and across Oliver Avenue, with the Air Force Base on the east side of the field. While I was there, the Air Force Base was used as a training base for B-47 flight crews and as a receiving base for new B-47 and B-52 aircraft. There were two parallel runways running basically north-south, between the Boeing facility and the Air Force Base. These runways were over 10,000 feet in length. Yet it is frequently necessary to use afterburner (that is where additional fuel is added to the exhaust and burned creating a higher pressure in the exhaust pipe and increased thrust) on both the B-47 and B-52 aircraft during takeoff and deploy a parachute for additional drag to slow the aircraft on landing.**

- It was 29 March 1957 that I was scheduled for an early morning flight test. The B-52-B flight test purpose was to check the high-altitude effects of positive to negative G forces. As I left home with my car, I found that chilly air awaited me in the early morning darkness. I drove out to the Flight Test Center and grabbed my flight test uniform with all its equipment so that I could be the flight test engineering representative aboard the test airplane. As I was dressing, my lead engineer, Earl Reed, came in and decided to replace me.**
- I remained in the control room at the Flight Test Center**

to watch the instrumentation throughout the test. The takeoff and climb to altitude were uneventful. During the first negative G maneuvers one of the alternators dropped off-line resulting in a reduction of the electrical power for the aircraft. After discussing the situation, and performing a system reset a discussion was held in the flight test office, we decided to continue the flight.

- During the next attempt to negative G maneuver, again alternators failed, and dropped off-line but this time all of them did. The consequent loss of all normal electrical power resulted in loss of power to control the aircraft. The stall warning sounded and a stall occurred, followed by an aircraft upset and a steep descending dive. The flight commander (pilot) called for the crew to eject. On the ejection seats was an ejection handle called a D ring. As the crew pulled their D rings, nothing happened. Earl calmly started calling out altitude and Mach number (actual speed with respect to the speed of sound) readings over the radio link as the plane was descending. The altitude dropped further and further and the Mach number kept increasing. Eventually the Mach number approached and exceeded Mach 1 (the speed of sound). The aircraft started to break up. Some of the seats, including Earls seat, deployed. As he came out of the

**airplane he saw the vertical stabilizer pass not more than a foot beneath his nose. Earl survived but was hospitalized in Tulsa Oklahoma for several weeks. He was the only survivor of that flight crew. I would have been aboard.**

- As the flight engineer most closely associated with that flight I was called upon to be part of the accident investigation team. The team was chaired and fundamentally staffed by the Air Force as the airplane was used by Boeing on lease from the Air Force.**
- Technical substantiation of the flight loads and performance data of the aircraft during the failure event was provided by a combination of analysis of the flight test data which was transmitted back to the control center during the flight, and the basic aerodynamic and loads calculations previously performed during the design phase for the aircraft. In addition, the windtunnel models were modified and tested at the flight conditions at which the aircraft was shown to be incapable of deploying the ejection seats. Aerodynamic loading was derived from these windtunnel tests.**
- The localized inertial loads seen by the CSD's (Constant Speed Drives) during the failure event which included the**

relay unlatch G forces proved that due to the inherent flexibility of the airframe and wings of the B-52, the G forces at the nacelles were significantly higher than those experienced at the center of the airframe itself.

- We discovered several problems with the B-52 during that flight and subsequent accident investigation. First we discovered the constant speed drive relay latch springs had insufficient strength to take the negative G forces. This resulted in decoupling the power system from the alternators; i.e., loss of normal aircraft electrical power.
- Second we discovered that the hatches that were supposed to deploy when the D ring was pulled would not due to the aerodynamic pressure on the fuselage of the aircraft holding them in place.
- Both problems were corrected on later versions of the B-52.
- All accidents in aircraft result in learning of ways to enhance the safety of flight. Finally, this confirmed that an accident is never the result of a single failure but rather, due to the "inherent redundancy" within the design, multiple failures which lead to accidents. At times these are mechanical failures. At other times they are

**failures of the science by which the aircraft is designed. In both cases, learning is achieved. This is but the first of several aircraft accident investigations in which I've been involved.**

**I was involved as a primary technical specialist in aircraft design safety. Through this acquaintance with aircraft accidents I have also been involved with several international committees on preparing the rules for aviation safety that are the basis by which the FAA in this country as well as the airworthiness agencies in many foreign countries, guide the design of aircraft. I have been a member of several international committees promulgating these rules for aircraft and powerplant design and manufacture. This background allowed me to act as a designated engineering representative (DER) with authority delegated to me by the FAA since my retirement from General Electric.**

**Much of what I have done is based on science, an eclectic ((Universal but disparate) process of rationally defining new aviation products. As the technology has changed over the years we frequently find that some of the old processes, scientific facts(?), and rules of thumb for aircraft design must be changed. The new technology does not necessarily fit the old technology or science and those earlier rules. Therefore the rules of design defined by the certification agencies are**

constantly in a state of flux. Sometimes these this carries into areas into which formal logic and science does not clearly fit. That is where I will get into the esoteric.

The next accident occurred in 1980 in the Congo which was known as Zaire. It involved a Russian bomber, believed to be carrying both a nuclear weapon and intelligence gathering electronic equipment. It disappeared during a flight from West Africa through the Congo River basin to East Africa and Somalia. All aircraft, whether military or civilian, carry what is known as the black boxes. The black boxes are actually yellow, and they are equipped within them with a radio transmitter to send out a signal identifying to search parties where the wreckage may be.

It was of great interest to many nations and terrorist groups, as well as to local natives, to find the location of this wreckage. There was scrap metal wealth and intelligence information as well as a nuclear bomb to recover from the airplane. Searching went on by all intelligence agencies for many weeks and nothing was found. Over flights looked but with the dense jungle canopy, they could see nothing. Now we get into the esoteric, unbelievable, yet valuable, and the scientifically unprovable. The United States had a secret organization under the auspices of both the military and intelligence agencies that was then called "Grill Flame". It was



basically a development of psychic warfare. After millions of dollars had been spent by many groups attempting to find the wreckage of this aircraft, the esoteric approach was considered a possible way of finding it. Thus "Grill Flame" was brought in. Many people ridiculed the possibility of it working, however, nothing else seemed to work. So now, in a pinch, it was time to try. Without discussing details, Pres. Jimmy Carter announced publicly the positive results of the "Grill Flame" research.

The basic technique you may have heard of. It is called "Remote Viewing". This technique was initially developed by the CIA under contract at Stanford Research Institute (SRI). It was headed by two PhD physicists from Stanford, Doctors Hal Puthoff and Russell Targ. This work had been started during the late 60s and early 70s with support from several natural psychics, including the well-known Ingo Swann. Among his many accomplishments was finding details much later confirmed by NASA of the structure, the atmospheres, the chemical constituents, and additional detail originally denied by the top astronomers and astrophysicist throughout the world. Each of these things, as far as we can go today, have been confirmed. Some of his projections cannot yet be confirmed by our actual space exploration. I could go into great detail about this but that's not part of the aeronautical

**adventure that we have departed upon.**

**Four separate American viewers all found indications of the wreckage within a small area of the Congo basin. When these locations were charted on detailed maps they overlapped and fell in very small area. The location where they found the wreckage was over 500 km from where everyone had been unsuccessfully searching. Their overlapped area was near the banks of a small stream that fed into the Congo River with only, as they visualized it, the tip of the wing sticking out of the water. When the wreckage was located by the US, there was no nuclear weapon aboard, but the intelligence equipment provided by the electronics aboard the aircraft was very helpful to us during those Cold War days.**

**This approach to discovery must be considered a very esoteric approach. Many people doubt, with good reason, its efficacy. However, it is becoming a more and more important part of actually accomplishing investigation of major aircraft accidents, as well as uncovering secrets, both military and industrial. Many large international businesses presently use this technique. It is now being provided as a consulting company called the Farsight Institute under the direct supervision of Dr. Courtney Brown, Emory University, Atlanta.**

**The next accident, the investigation of which I was**

peripherally involved was EgyptAir Flight 990. The National Transportation Safety Board (NTSB) summary of this incident is:

### **EgyptAir Flight 990**

<b>Date</b>	<b>31 October 1999</b>
<b>Site</b>	<b>Atlantic Ocean, 100 km (62 mi) S of Nantucket</b>
<b>Passengers</b>	<b>203</b>
<b>Crew</b>	<b>14</b>
<b>Injuries</b>	<b>0</b>
<b>Fatalities</b>	<b>217 (all)</b>
<b>Survivors</b>	<b>0</b>
<b>Aircraft type</b>	<b>Boeing 767-366ER</b>
<b>Aircraft name</b>	<b>Tuthmosis III</b>
<b>Operator</b>	<b>EgyptAir</b>
<b>Tail number</b>	<b>SU-GAP</b>
<b>Flight origin</b>	<b>Los Angeles International Airport</b>
<b>Last stopover</b>	<b>John F. Kennedy International Airport</b>
<b>Destination</b>	<b>Cairo International Airport</b>

**EgyptAir Flight 990 (MSR990) was a regularly scheduled flight from Los Angeles International Airport, California to Cairo International Airport, Egypt, with a stop at John F. Kennedy International Airport, New York. On 31 October 1999, the Boeing 767 operating the route crashed into the Atlantic Ocean, about 60 miles (97 km) south of Nantucket Island, Massachusetts, killing all 217 people on board.**

**When airplane crashes in international waters, investigating authority is extremely dependent upon finding and recovering the black boxes. The route of the aircraft was quite well-established by being traced not only by the black boxes but also on air traffic control radars which must constantly monitor the altitude, speed, and location of the aircraft with respect to the altitude, latitude and longitude as identified by the GPS system. However, when airplane goes into the water it does not go straight down, rather, the aerodynamic surfaces, wings and empennage (tail structure), fly the aircraft through the water to its resting site on the ocean bottom, and sometimes result in roll and yaw. The speed of the impact, although slowed by the water density, results in those aerodynamic surfaces producing significant forces on the craft and realigning its position on the bottom from what would be expected by a direct impact.**

**Under ICAO (International Civil Aviation Organization) rules when an airplane crashes in international waters the Flight Safety Agency of the government under which it, the airplane, is registered has primary responsibility for the investigation. Because of its more significant technical depth, the NTSB was asked to participate.**

**After less than two weeks, with data that had been found, the NTSB had asked for FBI participation. These findings had shown the high probability that the copilot had deliberately crashed the airplane. The cockpit black box which records the sounds in the cockpit showed that the copilot, who was alone in the cockpit at the time, was praying and asking for the blessing of Allah for his sacrifice and service.**

**Investigation revealed that the copilot was associated with an Egyptian fundamentalist group who had participated in the assassination of Anwar Sadat the Egyptian Prime Minister. Aboard the aircraft were many of the top Egyptian military. The religious group had threatened the Egyptian military in the recent past. Because of this data, the NTSB had asked for FBI participation and provided this information to the Egypt Civil Aeronautics Authority.**

**The Egypt Civil Aeronautics Authority (ECAA) disagreed. They attempted to find a mechanical problem which caused the**

**accident. That is primarily why the technical staff was looking at various alternatives in the mechanical realm.**

**Although I was on vacation, this incident closely paralleled a similar 767 incident in India in which the thrust reverser had inadvertently deployed. The airworthiness authorities had initiated a study by thrust reverser manufactures of the probability of thrust reverser inadvertent deployment. I was on the international committee, and since this was a suspected scenario at least initially, I was asked to participate in the review of the data that was coming from the accident. This review led to no new data of any significance.**

**An earlier accident was a Swissair flight of an MD-11 off of Nova Scotia. This 1998 flight, Swissair flight 111, was known as the UN's shuttle between JFK in New York and Geneva Switzerland. The details are:**

- Swissair Flight 111 (SWR-11)**
- (SWR-11) was a Swissair McDonnell Douglas MD-11 on a scheduled airline flight from John F. Kennedy International Airport in New York City, United States to Cointrin International Airport in Geneva, Switzerland. This flight was also a code share flight with Delta Air Lines.**

- On 2 September 1998 the aircraft used for the flight, registered HB-IWF, crashed into the Atlantic Ocean southwest of Halifax International Airport at the entrance to St. Margaret's Bay, Nova Scotia. The crash site was 8 kilometers (5.0 mi) from shore, roughly equidistant from the tiny fishing and tourist communities of Peggy's Cove and Bays water. All 229 people on board died. It was the highest-ever death toll of any aviation accident involving a McDonnell Douglas MD-11.
- The initial search and rescue response, crash recovery operation, and resulting investigation by the Government of Canada took over four years and cost CAD 57 million (at that time approximately USD 38 million). The Transportation Safety Board of Canada's (TSB-C) official report of their investigation stated that flammable material used in the aircraft's electrical systems allowed a fire to spread beyond the control of the crew, resulting in the loss of control and crash of the aircraft.
- On Swissair Flight 111 was known as the "U.N. shuttle" due to its popularity with United Nations officials; the flight also often carried business executives, scientists, and researchers.
- Since, as stated earlier, results indicated the possibility of

**a fire cause for the accident and since I had been involved in significant propulsion system fire testing of the MD-11 for McDonnell Douglas and had been able to negotiate an improved approach to some of the fire testing with the FAA, I was called upon to review this accident and the data resulting from it. As I reviewed the various reports, e-mails, notes, and technical discussions associated with this accident it became apparent to the technical community that an alternative approach could very well be helpful. Again, the aid of remote viewing specialists in the US was requested. The information provided by this esoteric approach helped to clarify some of the actual issues involved in this accident.**

- In June 2004, the TSB – C released the findings report for this accident.**
- On September 14, 2011, CBC News reported that an ex-RCMP officer has evidence to show the crash may not have been an accident.**
- The remote viewing information correlates very closely with the RCMP data mentioned above. In fact, he RCMP was able to confirm the data from the remote viewers and thus define this as a "non-accident". Due to the findings by the RCMP, the TSB-C is considering reopening**



**and revising the accident report.**

**How are we to consider that this very unusual and esoteric approach as being real. But then as I asked Rollin many times, "... What is reality?". For me, my reality is only that which I think I experience. There is no such thing as scientific "truth". All science of which I am aware evolves with time, and yesterdays truths become today's good approximation. Within the last few weeks even Einstein's declaration of the speed of light limit has been brought into question by discoveries of certain very small particles. Since your ideas are just as good as and perhaps better than mine, what do you think?**

### **Air France Flight 447**

**The final accident I want to discuss with you is Air France Flight 447 from Rio de Janeiro Brazil (RIO) to Paris (CDG) on June 1, 2009 at 0220 GMT (Greenwich Mean Time). Although I was retired and not directly involved yet I was posted on the investigation by both the Brazilian and French authorities. A major problem occurred in that the plane went down out of radar range over the Atlantic. From the flight profile that was filed prior to flight, the expected location for the plane and/or its debris was established. It took five days before the Brazilian military started to find debris. There was no sound in**

**the electronic spectra from the black boxes. Finding those black boxes under these conditions with the wreckage on the bottom of the ocean is very difficult.**

**After several weeks of search, a combination of French and US remote viewers were called in to aid in finding the actual wreckage. Suffice to say, they were able to strongly assist in finding that wreckage and the black boxes which were recovered by unmanned submersible vehicles. Unexpectedly, the black boxes were not in close proximity to the main structural wreckage. Based upon where they were found, with the help of the remote viewers, it was deemed unlikely that they would've been found without that help. When queried, those black boxes provided the necessary data to confirm an actual cause of the accident. This was, as suspected a Pitot tube occlusion.**

**In summary, the eclectic scientific procedures are used to establish the causes of aviation accidents. They also are used to define any changes in the rules of design to minimize the probability of similar accidents happening on other aircraft. This is done by a combination of rules affecting new model aircraft and special inspections and repair work on existing aircraft. Of course when you're dealing with a big bureaucracy there are always lots of paperwork to justify whatever is done. In several of these cases, it was necessary to deal with**

multiple bureaucracies because more than one nation was involved. Finally, to openly discuss with the public and with the administrators of these agencies, the use of the esoteric normally brings a combination of laughter, anger, and outright rejection of the results of these approaches. It is the technical staff that, much to their own surprise, actually find these approaches of value. Engineers, usually being pragmatists, like what works. It appears to us that remote viewing works. There is no way that I know, or any of my comrades seem to know, that scientifically supports remote viewing.

These esoteric approaches do appear to work but are dependent upon parapsychological aspects. This aspect is anathema to many religious people. I personally do not quite understand why. With this in mind, I hope this paper has not resulted in great discomfort among any of this august audience. It is simply a reflection of what, over many years of my career, I have learned.