

Seat Belts Designed, No Vehicles

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I developed a completely different “sequence of events” for Challenger from lift-off to, and beyond, the explosion that we all saw on television. There were many unique events that were missed in all the other investigations. The important events are supported with clear evidence. One event was the **real** Challenger Crew Cabin (CCC) tumbling far away from all the other debris after the explosion.

In 1986, I discovered that what NASA identified as the CCC after the explosion, in the films, was a piece of debris, and I also captured the real Crew Cabin in the film record. I showed the evidence to a distinguished member of the Rogers Commission, officers from NASA, and others. The subject was emotionally charged then. Everyone thought it better not to release my finding publicly, and I agreed.

In January 1989, I gave a Continuing Engineering Education Program at my *alma mater*, the George Washington University, entitled, “*The Challenger Accident: An Integrated Analysis of the Official Investigation.*” In video, I showed the attending engineers the Challenger Crew Cabin drifting alone away from, and way above, all the other pieces. One engineer from NASA attended my 1989 program; Wayne Hale. My course was canceled after interference from NASA, as described in the Shuttlefactor Report. Again, I shelved the Challenger Crew Cabin subject.

On the tenth anniversary of the Challenger accident, I shared the Crew Cabin evidence with space reporters. The evidence included sequenced photos showing the CCC tumbling end over end, frame after frame. The photos show the unmistakable truncated outline of the Crew Cabin. I also pointed out that the piece identified by NASA as the Crew Cabin was shallow-shaped, that looked exactly like the Lower Forward Fuselage. The Fuselage piece can easily move in a stable attitude, like a kite, in the atmosphere. Only one space reporter, Tim Furniss, mentioned my CCC evidence on the tenth anniversary in a premier International aerospace publication, *Flight International*.

It now (2009) appears that NASA specifically noted both my findings and Tim’s article on the Challenger Crew Cabin in its records. For example, the NASA History Division included the text given below in the Report, “*Astronautics and Aeronautics: A Chronology, 1996-2000,*” posted in 2009. Under a “February 1997” entry (Page 55), the following is noted from Tim Furniss’ article:

“Taha’s (AbuTaha’s) photographic analysis also revealed that the explosion had propelled *Challenger’s* crew compartment thousands of meters away from the explosion, partially explaining why investigators had taken 40 days to locate the shell. Taha (AbuTaha) suggested that a shock wave had killed the crew instantly, although NASA had never found evidence of a shock wave. News of the photographs and of Taha’s (AbuTaha’s) research kept alive the debate surrounding the decade-old accident,” (my emphasis).

Even though Furniss’ article was specifically highlighted in NASA’s own briefs, the dramatic evidence of the Challenger Crew Cabin remained dormant.

The line between incompetence and cover-up can be thin. Sometimes, incompetence leads to cover-up. Sometimes, incompetence appears as cover-up. Also, the line between incompetence and mistakes is thin. With great care and effort, I captured and photographed the shock wave that ripped the Challenger and External Tank apart, sending the Crew Cabin tumbling far away from all the other pieces! You can see my photo of the shock wave in my Post #118 to collectSpace. Was there a shock wave? A picture is worth a thousand words. So, was it a mistake? Was it cover-up? Was it incompetence? To me, these are empty questions.

In 2007, Tim Furniss announced an eBook about his coverage of the space programs for five decades, and he included a Chapter on my Challenger work (www.spaceport.co.uk). The suggestion of a “cover-up” in his book evoked instant hostile attacks on Tim and his book on this side of the ocean. Of course, my hecklers had been at it since 1986, and I did not escape the venom of some “ill-informed, ill-qualified and ill-mannered” folks. I jumped into the fray, first defending Tim, then defending myself, then defending my work, then defending the Rogers Commission, then defending NASA itself, then defending our aerospace engineers who, in my opinion, made mistakes, serious mistakes, outright blunders. You will find some messages I sent to collectSpace in 2007 in this web site. These include some of my photo evidence. You can get the whole colloquy on www.collectspace.com.

Is there a point to the above chronicle today, in 2009? You decide:

Near the 2009 New Year Eve, NASA released a massive expensive study, “*Columbia Crew Survival Investigation Report*,” NASA/SP-2008-565 (www.nasa.gov). On December 30, 2008, Wayne Hale, now Deputy Associate Administrator for Strategic Partnerships, and other officers discussed the NASA 400-page report in a “Media Teleconference.” Hale said, “*We then instituted a larger team called the Spacecraft Crew Survival Integrated Investigation Team (SCSIIT) - -I won’t repeat that name again - - to capture the lessons learned from the loss of Columbia and her crew and develop recommendations to improve crew survival on all future human spacecraft.*” According to Hale, the massive study began in 2004, after the extensive official investigation of the Columbia Accident was completed.

A crucial input in the SCSIIT’s technical study was the trajectory of the *Challenger Crew Cabin* after the explosion of that accident. What happened to the Crew Cabin after that explosion? The Team worked with the wrong evidence; they could only find anecdotal information: “*The SCSIIT received anecdotal information that the Challenger CM (Crew Module) was believed to have reached a stable attitude (“trimmed”) in a nose-into-the-wind condition.*” The anecdotes said the CCC moved like a kite. The engineering analysis said otherwise. The conflict was a recipe for waste ful effort.

There was complete disagreement between the 4-year-long exhaustive aerodynamic analyses and computer simulations by the SCSIIT team and the physical evidence – the film record of Challenger. The engineers’ analyses indicated that the CCC should have tumbled in unstable configuration, but the film record showed the Crew Cabin in a stable attitude. The Team searched further, “*Relevant information was generally located by contacting personnel who worked at NASA at the time. No data could be found to support this anecdotal conclusion other than the video.*”

My photos of the Challenger Crew Cabin after the explosion show the Crew Cabin tumbling, now right side up, then upside down, then sideways, etc.; in full agreement with the exhaustive analysis of the SCSIIT technical team.

A crucial input to my finding the real Challenger Crew Cabin in the film record was the shock wave mentioned above. Careful engineering study of the shock wave leads to the Crew Cabin. I discussed the “shock wave” in my GWU Challenger Program, and it was the second picture in the handouts to my program, which Hale received in 1989. And then, there was Tim Furniss’ account about the Challenger Crew Cabin in *Flight International* in 1997. Did it occur to anyone to give the evidence to the SCSIIT engineers to help them substantiate their engineering results with correct physical evidence?

The SCSIIT study was massive, as Hale said, “*This team performed a comprehensive multidisciplinary analysis of the accident.*” Some reporters in the Media Teleconference sounded cynical. Others wondered why it took so long; e.g., Gina Sunceri asked, “*Why has this report taken so long to come out?*” Hale answered, “*... We wanted to make sure we had a thorough and complete engineering report...*” And what were “*the most vitally important*” or “*the biggest changes*” resulting from the study, asked Mark Mathews. “*I think the most important thing that was done was the inertia reel change,*” answered Hale, which he then compared to the seat belt in a car.

After President George W. Bush announced the retirement of the Space Shuttle by 2010, a replacement vehicle was crucial to our Nation. What were the Administration, in general, and the NASA Administrator, in particular, thinking (from 2004 to the end of 2008) assigning teams of good engineers to design seat belts for vehicles that don't exist? Why weren't the good engineers working on the design of badly needed new vehicle(s), or improving the existing ones?

In the case of the space program, as in the case of the economy and other vital national issues, the Obama Administration was dealt a *fold hand*: Seat belts designed with wrong evidence for vehicles that don't exist.

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