



Aerospace Legacy Foundation

Downey Aviator



Preserving our aviation and aerospace heritage

Fall-Winter 2007

Remembering Jeanne Dowd

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'Great expectations' by Dowd for Downey (1996)

By Henry Veneracion (Downey Eagle Archive September 22, 1996)

DOWNEY-As a teenager, Jeanne Dowd parlayed her ownership of a Brownie camera and a talent for writing into a mini-photojournalism career, contributing photos and producing a regular teen-oriented column on oceanographic topics for Skin Diver magazine.

As a reading/learning specialist armed with a bachelor's degree in English and a history minor from USC, along with a master's from CSU-LA, Jeanne was to work in then industrially developing Singapore for 13 years, teaching K-8 children at the Singapore American School while handling E.S.L. classes besides. She did the same thing, specializing in helping youngsters with learning difficulties, for similar American Schools in such exotic places as Jakarta, Kuala Lumpur and Bangkok, for four more years as she dovetailed her work schedule with that of husband Ed's, which dictated heavy travel for his New York-based insurance brokerage firm employer, Johnson and Higgins.

She eventually taught in so many cities that she points out with pride, "I was responsible for 1300 children representing 38 nations, for 17 years."

Jeanne and Ed were to further team up officially for Ed's firm to do audit work from 1987 on, not only in the Southeast Asia and Pacific Rim area but also in Stockholm, London, Barcelona, Italy, South Africa, South America, and finally to Australia and New Zealand. "We filed full business reports on national insurance developments from 29 cities in 17 countries in two years," she exclaims, adding, "To date I figure we have circumnavigated the globe 15 times at least."

Thus Jeanne is no stranger to other cultures, individual and national aspirations, and children's dreams. While Ed opted to stay in Sydney and work as a consultant for the New South Wales Treasury, Jeanne returned home to Downey two years ago to actively pursue a third career of sorts-as a film and video program producer. Her "edj Media Services" at 7409 Arnett St. features a top-of-the-line digital edit suite, capable of sophisticated video production using 16-mm film. This new expertise, she said, she picked up during her last two years in Australia. She also attended video seminars and presentations even as far as Europe. She says it is just a natural extension of her early interest in camera work and photojournalism which she had never neglected anyway. She has already produced a 13-week Science and Technology series for Channel 28, while filming significant S&T projects in schools for educational use, and collaborated extensively with Rockwell Space Systems engineers who have since become good friends, in Rockwell's workshops for children.

It was through this maelstrom of activity, she says, including handling a video and film production class at the Downey Adult School, that she got to meet William "Walking Willie" Croker, "a truly remarkable man." "Walking Willie" pumps gas for a living, she says, at the corner of Paramount and Firestone boulevards, but he has met presidents and many celebrities in the course of his "walking" crusade to help battle cancer, after losing his whole family to the dreaded disease.



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Yes, it came from Downey...



"Home of Apollo"





Remembering Jeanne Dowd ...continued

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In fact, Jeanne's "edj Media Services" is sponsoring "Walking Willie's" next walk: the almost 4,000 mile-long Great Wall of China. Jeanne is providing three vans to monitor and cover the walk, for which arrangements are being made to make the event "an electronic schoolhouse" which will be hooked up with the World Wide Web, to provide both entertaining instruction to children all over the world and cultural food to adult viewers. A first preview of "William Croker... A Man and His Dream," a film produced by Jeanne and her "outstanding team of Elaine Gurley, my photographer, and Alfredo Cartagena, my college student-technician and editor who is very skilled," is scheduled for Oct. 5 in Seal Beach. It is meant, she says, to call attention to "Walking Willie's" great efforts.

"He possesses an unbelievable treasure trove of film clips showing him shaking hands with the mighty and the famous," she said, bicycling to my studio every Sunday for filming sessions for months until we finished the film recently. We would be joined at times by my Rockwell engineer friends. Oh, it was so much fun."

Yes, if there's any single thing that encapsulates Jeanne's outlook, it has to be the fact that all along she's been having fun, fun that springs from the creative use of her talents and energy, fun that comes from rubbing elbows with "so many talented people around us, so many interesting personalities."

Jeanne's lobbying for a combination space museum/space library/virtual reality park Techno-center on the 144 acres NASA may turn over to the city is prompted by what she has observed and learned. But always, she says, she comes back to the needs of children, perhaps because she and Ed never had any of their own. (Editor note: son Edmond "Mike" Dowd d1962)

"My neighbors' children are always welcome to use my computers, especially on weekends," she said. "And they have so much fun. And I'm sure they're eagerly assimilating knowledge and ideas they're naturally hungry for."

"What's the point of another movie theatre or an additional park," she asks, "Wouldn't a science and technology center provide more excitement to the city of Downey? After all, this is the birthplace of American's space program, isn't it? If we project Downey as such, won't we have droves of tourists to this place? Let's transform it, through the wonders of technology, into a wonderland of fun and learning!"

"Jeanne was a true visionary. She knew her time on earth was limited. Her dedication and persistence has proved to be a success... a learning center and historical showcase honoring the legacy of Downey's contribution in transforming our world. We have Jeanne, and also her husband Ed, to thank for raising awareness about preserving our incredible aviation and aerospace heritage". Larry Latimer- ALF Vice President

"Jeanne Dowd was the founder and visionary who created the Aerospace Legacy Foundation. It was through her efforts in the local community that the Columbia Memorial Space Sciences Learning Center is becoming a reality. This article from the Downey Eagle in 1996 tells a part of the story of Jeanne, a remarkable woman and contributor to more the just a local community. Jeanne has made a difference in so many lives and will continue to do so in spirit". Jerry Blackburn , ALF President

"Bring me men to match my mountains!" goes a famous stirring call to great achievement. From the start, Jeanne seems to have heard the cry and has heeded its real message".



She never gave up...



Andy "The Astronaut" Monsen and Jeanne





Quarter-Scale Space Shuttle Model

by Stan Barauskas



Quarter-Scale Space Shuttle Model

April 3, 2007

Quarter-Scale Shuttle Test Article positioned in the vibration test fixture, Downey Bldg 288



At the outset of the Space Shuttle Program a Ground Vibration Test of the individual and mated Shuttle elements was included in the overall test and verification planning. The production schedules and availability of the flight Shuttle elements made it desirable to consider sub-scale rather than full-scale vibration testing. The Saturn V one-tenth scale model, for example, was successfully used to provide some satisfactory vibration data but at one-tenth scale it was necessary to simulate some upper stage structure and joints and did not provide the same degree of correlation with theory as desired. There was some consideration given to a one-eighth scale and a one-fifth scale Shuttle model but each had its limitations. The final size selection of a one-fourth scale was large enough to permit near replication of all primary structure and joints while meeting the size limitations of the available test facilities. The design and fabrication of the test article were initiated in mid-1974; the testing began in late 1976 and was concluded in December 1977.

The vibration test program concentrated on the dynamic environment of the mated Shuttle configuration associated with the initial phases (from lift-off to through main engine cut-off) of the Shuttle mission profile. The vibration testing included verification of the dynamic math model of individual single elements (External Tank, Solid Rocket Boosters and Orbiter) and four different Shuttle system assembly configurations:

Heaviest assembly (included a 500 lb payload in the Orbiter Payload Bay to simulate the maximum 32,000 lb actual payload).

A lesser weight assembly simulating conditions at a critical boost phase flight time

Least weight assembly at the end of boost phase

External Tank tilted at 13 degrees to simulate post SRB separation

Three pairs of SRB's were created to simulate three different configurations: one pair was completely filled simulating lift-off, a second set simulated the propellant level at max Q and a third set simulated the SRB empty condition at burn-out. The External Tank Oxidizer was simulated with deionized water with the level adjusted according to the mission phase being simulated. The liquid hydrogen fuel quantity was considered small enough to be omitted from the model for test purposes. In order for the model to be representative, full replication (exact scaling to the 1/4 of actual dimensions) and near replication, which allowed for some minor simplifications for cost savings, were implemented. Near replication was permitted where the overall elastic stiffness characteristics would not be compromised. Careful attention was given to joint design and the use of alternate materials that were selected for their stiffness similarity and ease of fabrication. **Continued**

**Quarter-Scale Space Shuttle Model**by *Stan Barauskas*

The design, fabrication and assembly were accomplished by Rockwell International's Los Angeles Division Model Shop with ~ 90% of the machined detail parts and subassemblies subcontracted to various aerospace manufacturers. Once completed, the entire assembly measured 46 feet from the bottom of the SRB boosters to the tip of the External Tank and 19.5 feet wide, Orbiter wing-tip to wing-tip. The weight of the entire assembly simulating the lift-off configuration was 62,853 lbs.

The test fixture was assembled in the high-bay of Downey's Bldg 288 and consisted of an open, rectangular, bolted steel framework 56 feet high, 30 feet wide and 26 feet deep anchored to the facility floor concrete slab. Ten vibration tests were performed in the facility simulating various Shuttle Element and Assembly configurations and ascent flight phases.

The quarter-scale Shuttle dynamic test program met its objectives of providing verification of predicted dynamic response characteristics early in the Shuttle effort. The data obtained from the dynamic tests have verified the math modeling techniques for predicting modes and frequencies of various Shuttle configurations. The program confirmed the benefits of the use of dynamic scale models to verify math models and assist in the analysis of vibration environments of future space flight launch vehicles.

Ultimately, the quarter-scale vibration test data were enhanced by additional vibration testing performed during the Full Scale Mated Vehicle Ground Vibration Test Program conducted at the Marshall Space Flight Center beginning in late 1978 and ending in March 1979. For these tests the Shuttle Orbiter Enterprise, having completed its Approach and Landing Test Program at Dryden Flight Research Center, was ferried to MSFC on March 13, 1978 and mated to an External Tank and Solid Rocket Boosters. The objective for these tests was to evaluate the mated configurations' critical structural dynamic response modes which were then assessed against analytical math models used to design the various element interfaces.

Subsequent to the completion of all testing required to support the Space Shuttle Program, the Shuttle Quarter-Scale Assembly was retired as a test article and downgraded to its status as a museum display artifact. The External Tank and all three of the SRB configurations were shipped to NASA JSC and are currently stored there. The Orbiter element was provided to Canada's SpacePort Museum in Calgary for display on a 10-year loan basis (expires in 2010) and is currently suspended from the ceiling of the Calgary International Airport (see photo). The National Air and Space Museum of the Smithsonian Institution intends to have the External Tank and SRB elements eventually transferred from JSC to its facility in Washington D.C. They are destined for possible future display as a complete Shuttle Assembly once the loan period of the Orbiter for the SpacePort Museum expires. There is a possibility that Downey might be the eventual home for this incredible model if certain conditions are met. Dr. Neal, Space History Curator at the National Air and Space Museum, stated "...please be assured that future display of the model at Downey may be possible when (a) the artifact is transferred to NASM custody and (b) you have a museum-like facility open to the public. As the original home of the orbiters, Downey is certainly an appropriate location for Shuttle artifacts."

In the meantime, the SpacePort Museum is also considering the possibility of requesting an extension of its loan for the Orbiter element.

The Quarter-Scale Model was an incredible engineering achievement and its temporary stay in Downey during dynamic testing certainly adds to the rich history of major space achievements that this site has witnessed over many decades.

Acknowledgements:

Technical information was obtained from a paper written by D.H. Emero, Project Manager, Shuttle System Project Engineering, Integration and Operations Division. The paper "Quarter-Scale Space Shuttle Design, Fabrication, and Test", was published in the Journal of Spacecraft and Rockets, 1980, 0022-4650 vol. 17, no. 4 (303-310)

NASA-JSC and Museum information were provided by the following:

Julie Kramer-White, Chief Engineer, Crew Exploration Vehicle Project

Dr. Valerie Neal, Space History Curator at the National Air and Space Museum of the Smithsonian Institution in Washington D.C.

Kim Sinclair, Commercial Properties Coordinator, Calgary Airport Authority

by *Stan Barauskas*

Boeing Space Exploration Systems
Space Shuttle Orbiter Propulsion and Power

Director, Aerospace Legacy Foundation

ALF Bulletin Board**Presidents Message - Fall/Winter 2007**

We are quickly bringing the year 2007 to a close. This will be our last newsletter for the year. Much has been accomplished this year. We have elected a new executive board of directors, opened a new ALF Office at the Downey Site, broke ground for the new Columbia Memorial Space Sciences Learning Center, established an educational grant program, made several group presentations and begun new organizational collaborations. In the next newsletter I will give you my 2007 Annual Report.

This coming year brings with it much promise, opportunity and I am sure a few surprises. A new book project and the expansion of our "Oral History" project are just two significant items to watch for in 2008.

As work continues on the CMSSLC the reality of facility to honor Columbia and the history of the Downey site grows more real. We still do not have a specific date for the opening but late next year or early 2009 is the most probable.

This month it is time to renew your membership if you have not already done so. It is our membership that gives ALF its credibility. We are currently at just over 150 members with another 150 student members. Our goal next year is to double membership.

Larry has recalled an excellent old article on Jeanne Dowd for this month's newsletter. Jeanne of course was the founder and spirit of ALF and we owe much to her efforts to be where we are today. Read this article and you will learn much of where the passion and enthusiasm comes from in our current organization. *We hope you and your families enjoy and have happy holidays and will join us in making 2008 another successful year for ALF.*

Jerry Blackburn President

Thanks and Thanksgiving

Larry Latimer

A very special thank you to all of our volunteers who have contributed time working at our office. Much has been accomplished. Special kudos to Jerry Blackburn, Kathy Blackburn (double kudos's), and Jim Busby who are the "daily" office crew (Tuesday thru Thursday). Our volunteers have achieved a great deal this past year. In particular, Bob Thompson, Bob Sechrist, Gene Meyers, Tony Wolski, Marvin Blaski, Anna Marie Brislin, Katy Dapice, and George Redfox (*among many others!*). Deepest appreciation to my wife Rose and my amazing mother Cleo Latimer. To Mary Stauffer, Ed & Charlie Dowd for believing in our cause and speaking the truth. To Marilyn & Gordon Madru (*and the Baptist Church for our nice meeting place*). Special thanks to the Dennis Beyrooty for his generous help and support of the Foundation. Also, everyone who has ever volunteered or donated items to the foundation. The Aerospace Legacy Foundation is blessed with a wonderful and dedicated membership. Thanksgiving is truly in order. It is our membership who deserve the most thanks, without you we would just be three letters...ALF. Finally, thank you IRG/Downey Studios and the City of Downey for letting ALF be a part of transforming a most historic site. Working together we can preserve the legacy of the site and share it with the community and the world.

All involved deserve special recognition for having the perseverance and vision Jeanne Dowd fostered in the mid 1990's.

2008 will be an exciting opportunity to bring in more members in anticipation of the future learning center completion. We have much to do and will be needing your help.

To all of you...have a wonderful Thanksgiving and Holiday Season.

Larry Latimer, Vice President

The Mystery of Boilerplate-12

James Busby

By James Busby

Aerospace Legacy Foundation

We had waited for some time until the day was finally cool enough for the team of volunteers and technicians from the Aerospace Legacy Foundation to make the attempt to go inside the capsule. Ladders were drawn up beside the old Apollo and they began their assault. The hatch, sealed for nearly 38 years refused to budge, so over 40 frozen bolts had to be drilled out taking nearly five hours. Finally late on a Sunday afternoon the hatch on the Apollo Command Module was successfully lifted out. A musty smell from so many years of being closed up drifted up. After a few moments Foundation President Gerald Blackburn hopped over the frame and went inside. He was met with a huge surprise- the interior layout was not correct according to the drawings we had obtained from NASA archives. Searching around, he soon found the identification plate- and was surprised. It read "BP- 12".

On four spots around the insides were found the I.D. plates that yielded the government numbers for the capsule — V 16-00012.

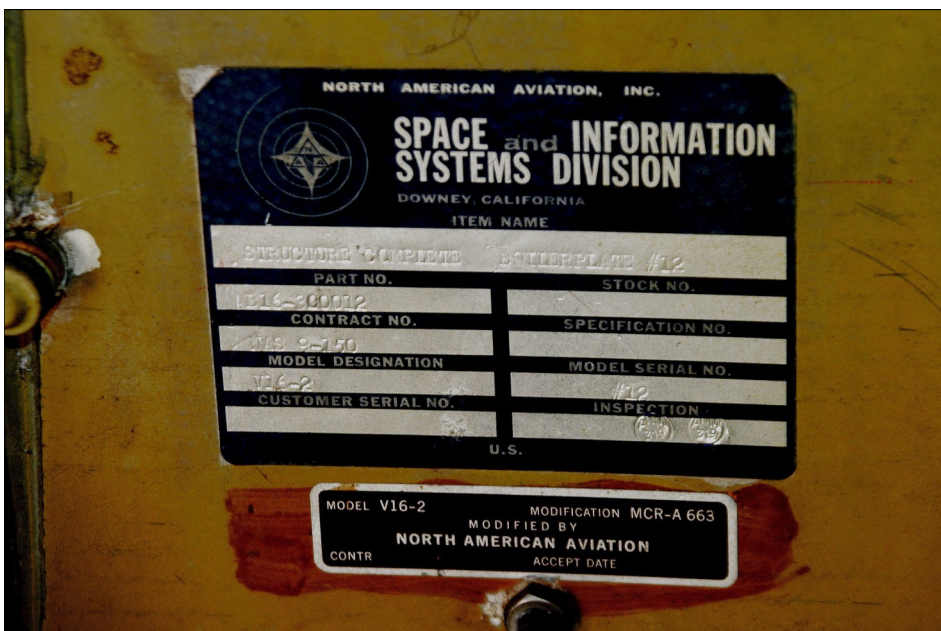
Apollo Boilerplate #12 was the first to fly atop the Little Joe II rocket on May 13, 1964 from White Sands Missile Range in New Mexico. This early Command module reached 28,000 feet in the first test of the Launch Escape system under actual flight conditions. On that historic flight, one of the three parachutes separated from the module at deployment but the capsule still landed upright and suffered little damage. This may also explain a slight indentation found inside on the bottom of the heat shield by the inspection team. Documents reveal that the BP-12 module was later "modified" into BP-12A and BP-12B configurations for rollover water impact testing from the drop tower at Downey, California. Apollo BP-12 remains the oldest known Apollo- flying a mere six months after the first pad abort test.

When outer access hatches were opened it revealed that the capsule had fared well in the 44 years since it was constructed in Downey. The ID numbers on individual pieces retained their chromate green color and the numbers were clearly visible. Foam which was likely applied when the craft was prepared for the later water tests is browning but also in good condition. The only area yet to be examined is the parachute area which retains a later Block-I apex cover, which will be lifted off soon. There is some access to this compartment and it appears that some earthly critters were able to find nesting there.

Soon this early Apollo will be joined by Boilerplate number 19, and both will be prepared as exhibits for the Columbia Memorial Space Science Learning Center, which is being built in Downey, Ca and is slated to open next year.

But a mystery remains: What happened to Apollo Boilerplate BP-6?

Aerospace Legacy Foundation





Great Moon Landing Hoax

Courtesy: www.about.com

Great Moon Landing Hoax

<http://space.about.com/od/astronomyhistory/a/moonhoax.htm>From [Nick Greene](#), Your Guide to [Space / Astronomy](#).

Did NASA Fake the Moon Landings?

Did NASA actually send humans to the Moon in the 1960's? Of course, but some people claim that NASA lied about the Apollo program and faked the landings. Actually, it would have been harder to fake the whole thing than to do it! Still, many people are confused about it, so let's look at a few points of contention and clear it up.

There are no stars in lunar photographs.

This is really simple to understand. The sun was shining brightly on the surface of the moon where the astronauts were working. With no atmosphere, that's some very bright light. In order for any photographs to come out and not be overexposed, the camera had to be set for a very fast shutter speed, which would prevent the much fainter stars from showing up at all.

The American flag seems to be waving in the breeze.

Try this. Take a flag on a short pole and wave it back and forth vigorously. You'll see that it stands out and ripples, but the moment you stop waving, it settles down. This is because of Newton's laws and gravity. The flag stops waving because of the friction from our atmosphere and settles down because of our gravity. If you tried the same experiment in space, the flag would continue to wave. Well, there is no atmosphere on the moon and the gravity is 1/6 that of Earth. So, when the astronauts had to twist the flag pole back and forth to get it to go into the lunar surface, it caused a ripple affect to be seen on the flag for quite a while. Thanks to the moon's gravity, the flag did eventually settle, as much as the second, horizontal pole would allow. In fact it dropped even further eventually. As the Lunar Module launched to rejoin the Command Module, the blast knocked the flag over.

Why aren't the shadows darker? Objects can be seen in the shadows. Since the sun is the only light source and without an atmosphere to scatter its light, those objects should not be visible. OK, this might be a bit confusing. Even though the Sun is the only light source, that light is being reflected by many things; the astronauts' suits, the lunar Lander, Earth, and most especially the Lunar surface, itself. This creates multiple light sources.

No human could survive the Van Allen Radiation Belts, so the astronauts could not have actually gone to the moon.

On the surface, this sounds pretty reasonable. If a human being stayed inside these areas of trapped solar wind particles for any length of time, he would die. The answer is really rather simple. The astronauts were not unprotected, nor did they spend any length of time in the radiation belts, probably not much more than an hour. They did not need lead shielding to be protected, the hull of the spacecraft provided more than enough protection.

Solid Evidence

Moon Rocks

You want physical evidence? Some of the biggest reasons to accept that the Apollo moon landings were real are rock solid. Apollo astronauts brought 841 pounds of Moon rocks home to Earth, a unique treasure trove that has taught us a great deal about the Moon. "Moon rocks are truly unique, and differ from Earth rocks in many ways," says Dr. David McKay of NASA's Johnson Space Center, one of the people who run the Lunar Sample Laboratory Facility where most of the Moon rocks are stored. "Several museums, such as the Smithsonian and others, let the public touch and examine rocks from the Moon," says David.

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<http://www.downeyhistoricalsociety.com/>

<http://www.pioneersinaviation.com/>

<http://www.thedowneypatriot.net/>

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→ About ALF

The foundation began in 1995 by a group of scientists, engineers, business people, educators, retirees, and the public at large. Incorporated as a nonprofit foundation in 1997. Our mission is to preserve Southern California's innovative aerospace and aviation heritage. Over seventy years of advancements from the Downey NASA Plant continue to influence many generations. Through our website and public meetings we honor and preserve the legacy of flight and space travel. We have an opportunity to teach future generations the magic created in Downey and Southern California. Most importantly, about the people who made it all real.

The foundation is currently working with the City of Downey planning and promoting the future Columbia Memorial Space Science Learning Center. We also do speaking /presentation engagements to groups. We are currently in new offices at Downey Studios organizing a vast amount of archival material.

"The Moon Hoax" continued

Dr. McKay says that faking a Moon rock to fool scientists around the world would be next to impossible. "It would be far easier to just go to the Moon and get one!" he says.

The Eyes Have It

While the United States was frantically trying to send men to the moon, it "was being watched keenly and closely by intelligences greater than man's and yet as mortal as his own; that as men busied themselves about their various concerns they were scrutinized and studied, perhaps almost as narrowly as a man with a microscope might scrutinize the transient creatures that swarm and multiply in a drop of water." *

No, not by aliens.

Russia, China, East Germany and other cold-war enemies of the USA closely monitored the lunar missions. It was easy to tell whether the Apollo radio signals were coming from the direction of the Moon, and whether the time delays in conversation matched the distance the signals had to travel. If anything had seemed wrong, surely these unfriendly countries would have loudly shouted to the world that the USA was pulling a hoax! Yet none of them ever questioned NASA's accomplishment. When even your enemy gives you credit for something, it's pretty convincing!



"There are so many other common sense reasons to believe NASA truly sent men to the Moon. The integrity of the twelve astronauts who walked on the Moon, nine of whom are still living, is one. The vast number of NASA employees, who are, after all, just regular people doing a job, who would have had to conspire, lie, and maintain the lie for over 30 years is another. The Conspiracy Theory program is fun to watch, but be sure to maintain your skepticism! The hardworking, ingenious Americans who got us to the Moon should be honored for their contributions and their pioneering spirit. Even though the torch has been handed on to a younger generation of engineers, we are all proud of NASA's legacy".

Gil Knier & Becky Bray <http://liftoff.msfc.nasa.gov/News/2001/News-MoonLanding.asp>