

PIONEERS OF STEALTH™

NEWSLETTER

2025 Destination: Orlando!

Fifty years ago, Ken Perko laid out the plans for the Have Blue Technology Demonstrator. Thirty-five years ago, a surprise birthday party for Bill Elsner turned out to be the first social gathering of the stealth pioneers. The informal gatherings continued between 1990 and 2006 in the Dayton regional area and were formalized by the "Pioneers of Stealth" Charter and Leadership Team during the 2007 reunion in Henderson, Nevada, hosted by Dave Lynch. Since 2007, the Pioneers of Stealth have had six biennial "reunions" until the COVID disruption which resulted in the 2021 reunion being delayed until 2022 and the POS Memorial Dedication the year after.

Pioneers of Stealth Meeting Chronology

1990	Bill Elsner's Birthday Party
1992-2006	Dayton Regional Gatherings
2007	Henderson, Nevada
2009	Colorado Springs, Colorado
2011	Northeast Harbor, Maine
2013	San Diego, California
2015	Colonial Williamsburg, Virginia
2017	Dayton, Ohio
2019	Albuquerque, New Mexico
2022	Fort Worth, Texas
2023	POS Memorial Dedication

Pioneers mark your calendars the week of 20-24 October with **2025 Destination, Orlando!** The hotel will be



Embassy Suites, Lake Buena Vista, four miles from the Disney Springs entertainment complex. The 2025 reunion is designed to focus your time visiting with your fellow pioneers while enjoying the Orlando and Florida area.

The following highlights the activities planned for group participation:

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LETTER FROM THE PRESIDENT

Happy New Year Pioneers!

I hope everyone's holidays with family and friends were as wonderful as ours. The first half of this new year is planned to be busy one for our family. This spring, we tour England and Scotland with our two sons and their families. In the summer, we return to Islamorada in the Florida Keys for some dolphin (Mahi-mahi), wahoo, and billfish. We will need a lot of luck as we go for the sailfish, blue marlin, and white marlin Grand Slam. Additionally, we also look forward to fishing the "new" Gulf of America for grouper and snapper.



Since the Fall Edition of the Newsletter, the POS Leadership Team has continued working the details of the 2025 Reunion and an effort to add benches to the NMUSAF Pioneers of Stealth Memorial. First, an update on the 2025 Reunion to be held in Orlando, Florida, 20 - 24 October. The reunion team's detailed planning is essentially complete and are in process of developing the POS Reunion website for registering for the event and the selection menu for activities for the members. As is typical in the past there will be two sections, the first will describe the day-to-day details and social events, and the second section the menu for selecting the events, booking the hotel, and reserving your place at the reunion. A highlight of most past reunion dinners has been a guest speaker. This reunion the team

decided to mix it up a little. They are requesting membership participation in an after dinner interactive event for "Before the Colors Fade." It is sure to be entertaining and relevant. Look for the POS members email on the subject asking for your participation.

On the second item, during one of our recent POS Leadership meetings, Rob Bongiovi recommended that the Pioneers of Stealth revisit the addition of benches for the POS Memorial. The original planning of the memorial made provisions for two benches, however, they were not budgeted for in the final approved memorial project. Rob's suggestion resulted in a decision to conduct an initial study of a concept, cost and implementation plan. This newsletter includes an article about the "POS Memorial Bench Project."

The next few months will be busy rolling out the 2025 Reunion information and registration web pages and finalizing the POS Memorial Bench Project plans. As we go forward, if you have any questions, or comments, send me an email (jsummerlot@gmail.com).

Best wishes to all for the coming year, I look forward to seeing you at the reunion in October.

Cheers,

John Summerlot



2025 Destination: Orlando! - Continued from page 1.

Reunion Group Activities

Monday, Oct 20

- 4:00 pm: Begin Embassy Suites check-in
- POS Welcome packets distributed
- 5:30-7:00 pm: Hotel Happy Hour and Meet and Greet

Tuesday, Oct 21

- Kennedy Space Center Tour (Must preregister)
- Members not going to KSC are free to tour Central Florida
- 4-7 pm: POS Group Social (Hors D'oeuvres and Drinks) in Hotel Atrium

Wednesday, Oct 22

- 9 am-2:30: Lockheed Martin Visit/Tour (Must preregister)
- 4:30: Cirque du Soleil Show, Disney Springs (There are several bus departure times to accommodate those attending the show and/or dining at the Disney Springs complex.)

Thursday, Oct 23

- 9:00-11:30 am: POS Business Meeting - Hotel Meeting Room
- 5:30: Departure for POS "Before the Colors Fade" Reunion Dinner at Seasons 52 Restaurant

Friday, Oct 24

- 11:00 am: Hotel Checkout

Orlando, not only being one of the best family entertainment cities in the US, is centrally located which offers access to most of the state's attractions. One asset is the weather and October is one of the best months to visit with cooler temperatures and drier climate. Expect temperatures during your visit to be 74°-86° daytime and 64°-72° evening with casual attire, i.e. shorts, light shirts and



sandals, being the norm for virtually any occasion and venue.

Orlando is home to Disney World, Universal Studios, and Sea World all within 4 to 12 miles from your hotel. In case you are concerned, traffic flows extremely well even given the proximity to these popular attractions.

What would be entertainment without good food? We chose the Lake Buena Vista hotel location largely due to the quality, quantity, and variety of dining. Restaurants abound with hundreds to choose from within 10 minute drive. Disney Springs, which is 4 miles from the hotel, has more than 25 popular restaurants, such as House of Blues Restaurant and Bar which offers distinctive Southern-inspired cuisine along with national or local live entertainment.

October is a great time of the year to get in a round of golf. Orlando area has over 170 golf courses, 4 at Disney World alone. If you're interested in picking up some golf attire, stop by Arnold Palmer's Bay Hill Club & Lodge which is just 15 minutes from your hotel.

There is quite the contrast between east coast Atlantic and west coast Gulf beaches and water. East coast beaches are within a 60 minute drive from Orlando. Cocoa Beach is a classic beach town

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POS Memorial Benches

The POS Leadership Team is recommending that the POS organization plan, fund, and execute a project which will add two benches to the National Museum of the United States Air Force (NMUSAF) Pioneers of Stealth Memorial. The initial plan for the POS memorial included provisions for two benches, however, the final approved project deferred the benches for a future project and funding.

In order to maintain the consistency in quality of the NMUSAF Memorial Park memorials, the museum has established policies and procedures for the types of memorial available for dedication. For example it states, "Granite Memorial Benches may be placed in Memorial Park along the sidewalk or as part of a monument already in place. Approximate cost for the bench, installation, and perpetual care fee is \$5,000 - \$8,000."

After having preliminary discussions concerning the benches with museum personnel and Morrison Monuments, the POS Team met in early December 2024. As the first order of business, they reactivated Denny Jarvi as the Pioneers of Stealth Memorial Committee Chairman. The Team then agreed to the following initial guidelines:

Two benches would be placed on the existing POS Memorial pad as depicted in the included graphic;

The benches would not have any graphic pictures other than a small POS logo;



Proposed Memorial Benches for the POS Memorial at NMUSAF

The benches will be dedicated to the spouses, partners, and family of those that built the prototypes and first stealth combat aircraft;

The final wording (TBD) for the dedication would be placed on the edges of the bench seat(s) or adjoining plaque(s);

The current estimates for two Benches and installation is \$11,000, payable to the contractor, and perpetual care is \$2,000, payable to NMUSAF, for a total cost of \$13,000;

The bench project would be solely funded by POS membership contributions;

Morrison Monuments has been selected as our contractor for Benches and installation, pending approval to proceed.

A draft Letter of Intent is being prepared to be submitted to the NMUSAF by the POS stating our intentions to place benches on the current POS Memorial and will be forwarded once the Memorial Bench Project has been approved for funding by the POS Leadership.

Excerpts: “The Pioneers of Stealth,” By John M. Griffin

Chapter 7 - Other Stories Thru the Years

The Feathered Saboteurs of Grey Butte

By James D. Uphold, Hughes

Sometime in the Fall of 1978, a small group of engineers (three or four including Fred Rupp and me) at Hughes Aircraft Company's Radar Systems Group began to determine the optimum aperture design features for a low radar cross section (RCS) radar antenna. Our customer for this effort was Northrop with project leader John Cashen and technical direction provided by Fred Oshiro and Yu-Ping Liu.



would be installed in a Northrop test article (sometimes lovingly called a “blivet”) and the RCS effects of various alternate design approaches would be measured. The blivet was symmetrical side to side so when the measured RCS of the side with the test article was compared to the RCS of the other (virgin) side, the difference, if any, was attributed to the test model.

This was an unusual time in the life of what became a very important and highly classified set of projects/programs. Special Access Required (SAR) program procedures were evolving and no one seemed to know exactly what was required, especially those responsible for assuming implementation of security requirements. For example, what was an unclassified chunk of metal one day could and did become top secret the next.

In this environment we, Northrop and Hughes, began work in accordance with what Northrop people called a closure plan. Northrop had the requisite experience with low RCS structures technology and a willingness to train the Hughes people. The way we (Hughes and Northrop) decided to address the technical issues was to build a few small (approximately 8” cubes with wider flanges) design feature test models that

Importantly, actual test data would be gathered so that opinions, well intentioned though they may have been, could be discarded. The Northrop engineer given the assignment to bring the Hughes people up to speed in the effort was Dr. Yu-Ping Liu; the lead antenna design engineer was Fred Rupp.

The test procedures involved getting up next to the test blivet on ladders or lift platforms, installing a test model, taping the joint around the flanges with metallic (conductive) tape, getting away from the blivet support pylon (aka “the pole”) and then doing the radar illumination and reflection measurements. While the illumination-blivet rotation was going on we (Yu-Ping and the Hughes engineer) would be watching the cross section plots as they were printed and trying to remember the relevant design features. This was because as soon as the plots

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The Feathered Saboteurs of Grey Butte - Continued from Page 5.

came off the printer they were stamped with a very high level of classification and placed in a vault until a courier could take them to the Northrop plant in Hawthorne, CA.

On the first night I had the "watch" at the then MCAIR-owned Grey Butte RCS range, 25 miles east of Palmdale, CA. I nearly got lost because it was really dark out there despite there being a public road a few hundred yards from the range. I drove by the guarded access gate twice before I figured out where I was supposed to go. The guard, reasonable enough, asked who I was, what I wanted, and why I had driven by the gate twice. I saw my name on his clipboard but he said he had to call to see if I were approved for access. That took a seemingly very long time. I finally told the guard I had the articles to be tested that evening and no one would be happy if I had to take them back home instead of delivering them. He pondered that for a while and then let me in.

We began the scans of the sides of the blivet when, after awhile, everything suddenly stopped. The site test conductor exploded in a loud series of expletives, the most relevant of which was "damn owls." I asked Yu-Ping what that was all about and he said, "Come and see." We went out to the pole and found that it and the blivet had been liberally coated with burrowing owl excrement that had to be washed off before we could continue testing. It seems that while we couldn't see the blivet on the pole when the lights were out and the test was under way, the local burrowing owls could see it and recognizing a very handy thing when

they saw it, they flew to the top and used it for a lazy bird perch. They would sit there and be slowly rotated in azimuth that efficiently enabled their search for rodents (dinner) and would also relieve themselves. It is amazing how much stuff a small owl can hold temporarily. The owl stuff was sufficient to make the test results questionable if not useless and the owls would come and go according to their own schedule and refused to sit still. Hence the displeasure voiced when they showed up. In short, we inadvertently, but carefully, made measurements to prove that burrowing owls are not the lowest RCS birds in creation and their droppings are conductive and reflective. Range operations were necessarily suspended until the test item, blivet, and pole were cleaned.

After several hours of testing and cleaning it was time to go because the first glimmers of dawn could be seen in the east. I drove out the road to the gate and met again my least favorite guard. As I was handing him my site badge I said: "By the way, we noticed several figures in feathered coats without badges near the pole tonight." He looked worried and said "Oh shit!" I said "Exactly," and drove away.



Follow-up Responses to Excerpt from “The Pioneers of Stealth,” “Other Stories” F-117 & the GBU-27

F-117 & THE GBU 27 - Response from Ross Dillon

Thought I might offer a few additional details on the GBU-27/BLU-109 story in the most recent newsletter.

As a wet-behind-the-ears second lieutenant in the mid 80's, I was assigned as a munitions test engineer at Elgin AFB as the “backup quarterback” on the BLU-109 test effort. Due to the primary TE being away I was provided the opportunity to run the sled test event in his absence. As I was prepping for the event, I received a phone call from the bomb dump informing me that they couldn't deliver the bombs to the track, but would provide no details. Perplexed, I drove to the dump to exert my “magical second lieutenant powers” and learned that a mysterious aircraft had arrived in the middle of the night with the appropriately approved paperwork to quietly wisk the bombs away. Given at the time that the GBU-109 was the highest priority test program on the base (we had no idea why to be honest), I was thoroughly confused that this could be allowed to happen...the bomb dump would provide no other details. Eventually more bombs arrived from Lockheed and the test was allowed to continue but not without a significant schedule hit.



About a decade later I was assigned to the F-16 Program office and for some reason the story came up, with the punchline being that I had no clue (well....maybe a guess 😎) where the bombs had mysteriously gone. An office mate then surprised me by telling me that they had gone out west to support the F-117 test program. Seems he had worked in the F-117 Program office and was involved in authorizing the “theft.” I assumed that was the end of the story...

20 years after that chance encounter, I learned that a gentleman that I sat next to in the office had been previously assigned to the F-117 CTF as a munitions specialist, so I brought up the story. He not only confirmed it, but admitted that he was the one that secretly signed for the bombs in the bomb dump and squirreled them away.

And THAT'S the rest of the story.

Ross Dillon
USAF Lead Performance Flight
Test Engineer
B-2 CTF, Jul 89 - Jan 92



Color of the F-117

Response from Ramjet (Roger Mosely)

A small addendum to Alan's "color" article:

After we actually flew a few daytime visual detectability sorties, I took the data back to TAC. Gen. Creech was, by this time, the commander. We had enough real world data to show that visual acquisition would be almost as tough a radar, and we'd spent maybe \$5M on test sorties before we repainted 780 and 781. Throwing away the capability to do daytime combat sorties, particularly when the data looked very good, didn't seem like a good operational

limitation. So we go into brief, I pull out 20 slides and give it the old college try. I got about to slide #8 and Creech said quietly, "I like black." I agreed wholeheartedly, but said, "Let me show you a little more data, sir." I think I made it to slide #10, when Creech repeated himself. I think my reply was "Got it." The slides went back in the briefcase and we departed, soon after, for Vegas.

Ramjet
(Roger Mosely)

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environment that still holds its charm from the 60's and 70's manned space period and the iconic original Ron Jon Surf Shop. Canaveral National Seashore, which is the longest stretch of undeveloped Atlantic coastline in Florida, is a barrier island composed of dune, hammock, and lagoon habitat, and pristine beach. Gulf of America beaches can be reached within about 2 hours travel time from Orlando. Clearwater Beach is rated as one of the best beaches in the country and with its powdery soft white sandy beaches, its clear water (get it... clear water), and the sweet small beach town vibe.

Orlando and Central Florida offers a variety of sights, entertainment, and dining possibilities while you catch up with other pioneers during your stay. The details will be rolled out in early February on the POS Website which will include the POS 2025 Reunion Registration details. An email will be sent out to alert you when the website reunion pages are up and operating. One thing we do request is that you register early which helps your reunion team finalize group bookings and other details as soon as possible given there may be capacity challenges.

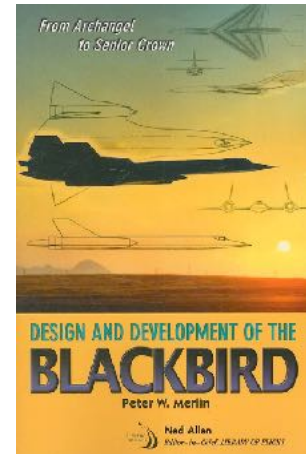
So, mark your calendars, [2025 Destination: Orlando!](#)



Skip's Stealthy Book Corner

BOOK REVIEW

"From Archangel to Senior Crown: Design and Development of the Blackbird," by Peter W. Merlin;
Published by: American Institute of Aeronautics and Astronautics, Inc.; February 28, 2008; 202 pages



The Counter Intelligence Agency (CIA) and Air Force Analysts concluded the U-2 would have a limited operational life before hostile radar and antiaircraft systems would render it obsolete. In 1957, the CIA commissioned a group of experts to determine the probability of detecting an airplane by radar with respect to the airplane's speed, altitude, and Radar Cross Section (RCS). The study concluded an airplane traveling at about Mach 4 with a radar cross section of less than 10 square meters would be difficult to track.

Mr. Merlin traces the difficulties the Skunk Works had in meeting the RCS requirements as well as designing an airplane capable of sustained high mach flight. Over eleven design iterations were proposed before the final configuration met the performance and RCS

requirements in 1959. The A-12 was a single place airplane powered by two Pratt and Whitney J-58 engines.

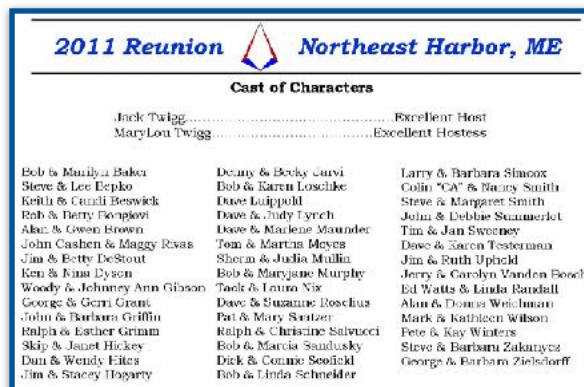
The description of the structural arrangement, the choice of materials, and the propulsion system necessary for sustained flight at Mach 3.2 further increases the readers' understanding of the challenges to the construction of the A-12. This was all done by testing RCS models, structural components, and wind tunnel tests....and engineers with slide rules. The AF-12B Interceptor, D-21 Drone and the SR-71 are all based on the technology derived from the CIA's A-12 reconnaissance plane. The experiments conducted by NASA on both the A-12 and the SR-71, and the effect of the design on high Mach aircraft, are very informative.

This review is only a small sample of topics covered in this book. It is well written and strongly recommended. Four Stars ****

Skip Hickey



A Blast From the Past



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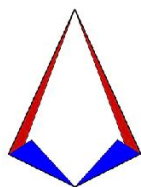
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www.PioneersofStealth.org

Pioneers of Stealth™ Charter

Purpose. The purpose of the Pioneers of Stealth organization is to perpetuate the spirit and achievements of a relatively small number of government and industry people in the early days of low observables technology and development. These "pioneers" believe the bonds created through their sharing of these successful achievements will always be an important part of their life experiences. They are proud of their accomplishments and enjoy being together to visit and revisit with those who all made valuable contributions to these challenging and revolutionary programs. Maintaining this social relationship is extremely important and a primary objective of this organization. The Pioneers of Stealth also believe that their value to the current defense acquisition establishment is best accomplished by using their strong record of achievements to be advocates and mentors for industry-government teamwork, streamlined management procedures, and minimal oversight and reporting requirements – all factors that significantly contributed to the historic successes of the low observables programs.

Next Issue.....

**Progress on POS Memorial Benches
Update for 2025 Destination: Orlando
Excerpts from "Pioneers of Stealth"**

