AN AUTONETICS FINEST HOUR – On August 12, 1958, the nuclear submarine USS Skate, SSN 578, broke through the ice cap and surfaced at the North Pole. On board were two Autonetics engineers, Zane Sandusky and Roger Schmidt, accompanying the N6A Inertial Navigational System in a very successful demonstration of the Autonetics system guiding the submarine under 2,405 miles of ice up to 54 feet thick.
Dear NAA Retirees Bulletin Subscriber

Another year has passed and we are still rising to the challenge. However, we regret to report that our list of subscribers has taken another drop. It is regrettable, but to be expected. We cater to the checkout generation and must anticipate these setbacks.

So many of you have expressed your concurrence with Larry Korb’s response to the Michael Griffin article that we are convinced that we are not the lone wolf howling in the wind. As long as NASA was the customer, we had to accept the blame for their sophomoric decisions. However, no more! Let the truth be known and the blame land where it belongs!

As mentioned previously, the 50th GOLDEN ANNIVERSARY BALD EAGLES REUNION will be held on Saturday, April 28, 2012 at the Proud Bird Restaurant. The speaker will be James Albaugh, Executive Vice President of the Boeing Company and President and Chief Executive, Commercial Airplanes. He will speak about the new Boeing 787 “Dreamliner” and provide a Boeing overview. Since this should be a splendid gathering of old friends, why not get a group together and make this a real Golden Anniversary celebration! To commemorate this 50th Milestone, the Bald Eagles Board of Directors are preparing special mementoes for all who attend. To add to the festivities, Martin “Buzz” Holland, the last survivor of the original Dundalk group, will attend so try to be there!

One of the joys of being the Editor of the Retirees Bulletin, is to find NAA people with a wonderful story just waiting to be told! Such is the case with our newest author, Roger Schmidt. He and Zane Sandusky were selected to represent Autonetics on a voyage, on board the nuclear submarine USS Skate, to the North Pole to test the N6A Inertial Autonavigator under the Arctic Ice Cap. As you read this story of these two men, your heart will swell with PRIDE because they represent the thousands of brilliant, capable and dedicated men and women that proudly wore the NAA badge – whether Numbered, Yellow, Gray or White. No task was too hard and nothing was impossible!

Appropriate for this 50th Anniversary of the Bald Eagles, the story of the great migration of the 50 NAA families from Dundalk, Maryland to Inglewood, California as seen through the eyes of a nine year old. Bill Schmitt tells how his Dad packed up the family in 1935 into a borrowed Buick and took the road to cross the entire country. These were not simple fruit pickers seeking El Dorado in California but skilled, dedicated engineers and craftsmen ready to “hit the ground” running and start building airplanes. The Depression was at its worst but Dutch Kindelberger “gambled” everything on the determination and loyalty of these people to hold out until the first airplanes came off the line and revenue would be forthcoming. They did not disappoint him.

With the New Year, we are starting a new series of articles about the folks that made North American Aviation, Inc. the great company that it was. These are not the ones who always received mention in the Skywriter or Snoopy awards but they were the bulwark of the thousands that carried the company to success. To our good fortune, to initiate this series, we found a couple that started at North American Aviation, worked at NAA, met at NAA and married at NAA. Without further adieu, we introduce Mike and Rebecca Aguilar!

Our friend and colleague Sonnie Robertson is still sidelined with her vision issues. Thanks to the system she imposed on the subscription list, Stan and I are able to update the renewals and new subscriptions for 2012. Please remember her in your prayers. Prayers are never wasted, so please be generous with them! — Ed Rusinek
In the late 1920s, my father, Frederick W. Schmitt, went to work for the Berliner-Joyce Company, located in Dundalk, Maryland as a foreman of the machine shop, welding and metal fitting department. The plant was small and contracts were scarce. In a series of mergers, it became the General Aviation Manufacturing Corporation. In 1934, when Dutch Kindelberger was brought on board, the company consisted of about 200 employees and had a dwindling net worth of about $11,000.00. The name of the company was changed to North American Aviation Inc. and, with the new management, the company succeeded in winning two Army Air Corps contracts. One for a trainer and the other for an observation aircraft.

In October 1935, on the basis of the new contracts, Dutch told the employees that he was moving the firm to Inglewood, California. He offered everyone a job if they were willing to relocate. Each would receive $500.00 to cover traveling and moving expenses. Fifty of them accepted the offer.

My Dad came home and told us that we were moving to California. I was nine at the time. In early November, the movers came, crated up our furniture, loaded up the moving van and took off for the land of sunshine! We did not own a car but Dutch asked my Dad if he could drive his Buick Roadmaster to California for him. My Dad agreed. The Buick had a spare tire mounted in each front fender. Our luggage was

In 1954, Frederick “Smitty” Schmitt was the 16th NAA employee to receive the 25 Year Service pin. The presentation was made by “Dutch” Kindelberger himself.
secured on the running board with a folding gate. So, in the luxury of Dutch’s Buick; my Dad, my Mom, my two Sisters, Muriel and Mary, and I departed Maryland and headed for California!

The trip across the country was uneventful except for a heavy sandstorm in Texas. We were accompanied by another family, the Carl Walterhoefers. He later became General Foreman of Experimental Department 9.

We arrived in Los Angeles on November 11th. An Armistice Day parade was in progress. We continued to Santa Monica where we stayed at a motel for a few days. My folks found and rented a furnished house at 16th Street and Wilshire Boulevard.

We went out on a Sunday to visit the Inglewood Plant. It was about 75% complete and surrounded by mud. The East High Bay building was complete but the office building which housed Dutch and the engineers on Imperial Highway and Aviation Boulevard was still under construction.

Since all of us were new arrivals in California, it became customary for the families to meet at the plant on Sundays and exchange information about homes for sale or rent, where to shop for certain items and other tidbits of gossip. A couple of barnstormers would show up on the adjacent asphalt strip called Mines Field and offer rides for a few dollars in their ancient biplanes. North of the strip stretched miles of lima bean fields. At times, the farmers got careless and plowed up parts of the asphalt to plant their beans.

To provide the families some social life, Dutch would invite everyone to a party in a rented hall. Sometimes, the parties got a bit rowdy and we were invited by the management never to come back.

Having worked as a shop planner and estimator in his job at Berliner-Joyce, my Dad organized the Planning Department and, later, the Material Control Department. After aircraft production began, he joined Dutch Kindelberger’s staff as Chief of Contract Pricing. When the company became a corporate giant, Dad was named Executive Director – Contract Pricing. He retired in 1966 with 37 years of service.

I enlisted in the Army in 1943 and served in the South Pacific with the 41st Infantry Division. Returning home in 1946, I enrolled in college and obtained my degree in 1950. I was hired at LAD for Manufacturing Scheduling on the B-1. When the program was cancelled, I moved to Rocketdyne to work on the MX Missile Stage IV. I retired in 1984 with 34 years of service.
Background

The year 1958 was named the International Geophysical Year (IGY). Many countries were involved in various activities, and the USA participated by providing scientists to the team assigned to establish a floating ice station on the polar ice cap. The idea was to traverse the Arctic Ocean by riding the moving ice cap, while recording wind, temperature, etc. readings and plot their movement. This trip was expected to last at least throughout the IGY.

The U.S. Navy decided to get involved by using its new nuclear submarines. Earlier in 1957, the Navy came to the Autonetics Division of North American Aviation and inquired into the possibility of supplying one of our Inertial Navigational Systems to a submarine for under ice navigation. This method of navigation was required because the normal ship’s Gyro Compass Systems will not work near the northern latitudes. All magnetic compasses only point to the North Pole and are rendered useless for actual positioning when approaching the North Pole.

Autonetics decided to adapt the complete forward package (nose cone) assembly which housed the Inertial Guidance System for the Navaho Missile (XSM-64A), and install it in the submarine. This system was designated as the N6A Inertial Autonavigator. The “Brain” was the NATDAN (North American Transistorized Digital Analyzer) computer.

We had decided to mount a backup computer on the bulkhead (wall) next to the system. This unit was electronically paralleled to the primary NATDAN. This precaution was taken as transistors were rather new and their reliability factor was not yet well established. The N6A was originally designed for a short missile flight of several hours and we were going to depend on its accuracy and reliability for weeks under the ice.

This complete forward package unit was installed in a vertical position (less floor space). First, the stable platform was removed and mounted on the deck (floor) near the electronics in the forward package. In order to use the information from the system, we had to install the monitoring equipment used in the Engineering Lab at Autonetics. In the Navaho missile, all of these signals went directly to control surfaces, engines, etc. All the computer information was in a binary format (ones and zeros). This was presented on an oscilloscope screen and read out manually in an octal format. The octal numbers were then again manually converted to digital numbers to ascertain our position in latitude, longitude, speed, etc. A complete set of this information was manually recorded every five minutes. A set of readings was comprised of nine different computer locations which had to be manually selected prior to read out. This reduced data was then given to the ship’s navigation personnel for plotting, positioning, etc.

Autonetics was only allocated two men to accompany the system, keep it operating, perform all the necessary read outs, and interpret their meanings to the ship's navigator. This required people with a thorough understanding of the N6A Inertial Autonavigator. Zane Sandusky was selected as the responsible engineer and he selected me, Roger Schmidt, as his assistant and systems technician. We had been working together in the Engineering Lab on the N6A.

Set Up, Checkout and Shakedown Cruise

The N6A Inertial Navigation system, along with all the peripheral equipment, arrived at The Electric Boat Company in New London, Connecticut in early May 1958. The USS Skate was in the manufacturer’s dry dock while being outfitted for the polar voyage.

The N6A system was shipped from the Downey Autonetics facility. The team from Autonetics was there to install and test the system. This was done and first power on tests occurred on June 6th. Prior to power on, the first major hurdle was modification of the N6A liquid cooling system. In the Navaho Missile, this coolant was circulated via a pressurized closed loop. On the nuclear submarine, no pressurized lines were allowed. Consequently, we redesigned the system coolant line into a vacuum operated closed loop which worked adequately. This was found to be acceptable by Navy Standards for a nuclear submarine.

The N6A system was completely checked out in the operational mode and found ready for sea trials. We left port on July 18, 1958 for the sea trial. This was a one day cruise with
many extra civilians on board to check out all the special equipment which had been installed for the polar trip. Two specialists (programmers) from the Downey facility accompanied us to check out the new program for the computer. This program was designed to allow operation at 0 degrees north latitude. It was needed to fool the system into thinking that the North Pole was the Equator, so that the submarine could cross over without recalculating its direction.

Everything checked out perfectly and the N6A was declared ready for the polar cruise. We returned to the New London submarine base and unloaded all the extra checkout personnel and began to prepare the boat for our polar trip. They loaded food, supplies, etc. for the planned 60 day journey.

The Journey Through the Ice Cap

The following was a day-by-day account as originally written in my personal journal.

**Tuesday, July 29, 1958:** We checked out of the New London Motel where Zane and I had been living during the system setup and checkout period. A very busy day as we moved on board the USS Skate to live there for the next two months.

I thought I had sent most of my personal things home (via the Post Office), but I still had almost too much stuff for the one small locker assigned to me. I did take along one suit and two shirts, just in case we did stop in a foreign port. I certainly had hopes of visiting a foreign country after all the last minute rush and confusion of obtaining a passport at the last minute.

Zane and I had flown to New York City to get these passports. They were dated July 25, 1958. How we accomplished this in one day in New York City was just a miracle. We had both taken our birth certificates along for this trip as recommended by our Autonetics personnel department. I do not know why this directive was issued, as I’m sure they did not know what our itinerary would be. We certainly didn’t. However, it was fortunate for us that we had the required items for the passport.

Our bunks (beds) on the Skate were in the same room as our N6A and all the equipment. We lived, worked, and slept all in an approximately 10 by 15 foot space. We only left it to go to the galley to eat or for bathroom breaks. Also, may I mention there were no windows either! Not that I ever had time to look out them if there were.

**Wednesday, July 30:** @ 0130 hours (1:30 a.m.) we left New London and headed for the open sea. We turned the N6A Inertial Navigation set power on and it remained on until we stopped in Bergen, Norway on August 23 @ 3 p.m. We had no problems or system failures for the entire cruise.

When we left New London I was working the mid-shift from 12 noon to 4 p.m., then eight hours off and then back to work from midnight until 4 a.m. I did my sleeping during the day shift, so I could watch the movie that was shown every night @ 8 p.m. The crew took 30 films along so this meant reruns later in the cruise.

**Thursday, July 31:** I woke up about 10 a.m. with very rough seas pounding the submarine! We were on the surface to repair the snorkel system which had developed a leak. Repairs required that we needed to be on the surface for about four hours.

When we finally returned to our normal cruising depth of 600 feet, it was a big relief! When traveling at 600 feet under the water, it rides as smooth as if you are sitting by your kitchen table. The North Atlantic Ocean is not a friendly place to be on the surface! The huge waves really toss a ship as small as a submarine around a lot.

The medics are wearing mourning bands today, because the last of their fish died. As an experiment, we are carrying all types of plant life and fish to see how our air, environment, etc. affects them. The fish lasted 2 1/2 days. The plants are all over the boat and still look green.

**Friday, August 1:** We ran out of fresh milk, so now the cooks are mixing that powdered stuff. I don’t know if I will get used to that or not. We are making good time, but it will still be another week before we go under the ice.

**Saturday, August 2:** Today passed uneventfully except I did loan my college trigonometry book to one of the ship’s officers who was getting ready for a promotion test. I had taken some books along since I was going to college at night when home in California. I thought if I had some spare time I would study. But, this didn’t happen as I was kept very busy.
Before we left, we had two Navy seamen who had gone to school at Autonetics in Downey to learn the basics of our N6A Inertial Autonavigator. Included was a course in how to read the scopes and record the information. This way, each one of them and I would take a four-hour shift and then be off for 8 hours. This left Zane free to reduce the data and relay the information to the navigator.

**Sunday, August 3:** This was my first Sunday under 600 feet of water. Captain Calvert held an informal church service in the crew mess hall. I was impressed. The captain is a devout Lutheran and did a terrific job. I had not expected to have church services out in the middle of the Atlantic Ocean under the water.

In the afternoon we surfaced to send radio messages. While surfaced, we heard a news broadcast on BBC (the British News Station). They claimed reliable sources put the Skate halfway to the ice pack in a “race” for the North Pole! Where BBC got this information was a mystery. However, they were pretty close to accurate.

**Monday, August 4:** Today was uneventful. We were just off the coast of Greenland, and heading for the Denmark Straits. Don’t look for them on a map, but they really are between Greenland and Iceland. Today we received a briefing on our plans. It looks like the Skate will make several runs under the polar cap to the North Pole and then to some Air Force weather station called Alpha. We have been at sea for seven days now. It seems like a long time, yet I have been so busy that the time has really gone fast. I guess that is the secret: Keep busy!! I don’t care for this split shift schedule. I just get in bed and it’s already time to get up. Only three hours of sleep at a time doesn’t appeal to me. Today, the ice cream freezer broke down. I hope they can fix it. Homemade ice cream tastes pretty good after powdered milk and coffee all the time. I am still on the 12 to 4 shift.

**Wednesday, August 6:** Today was uneventful. I got to watch the nightly movie today. It was very good this time. It was “High Society” with Bing Crosby and Grace Kelly. I was happy I had not seen it before the trip.

We put the system on free inertial today and everything looks fine. We are now passing through the Denmark Straits between Greenland and Iceland. There is an old World War II minefield ahead. We are going next to it, I hope!

**Thursday, August 7:** Just after I got off at 4 a.m. we crossed the Arctic Circle @ 0410. The “Blue Nose” ritual was held for those who were first timers. This ritual is similar to the King Neptune Ceremony held when crossing the equator. Fortunately for us, the civilian guests on board were not initiated like the young sailors!

We had some excitement this morning. Sonar picked up what we thought was floating ice above us. This is unusual for this area in the summertime. Later, it proved to be a whale and big starfish.

The ship’s gyro compass went out, so we are using our N6A system for navigation from now on. This is now our only operational navigation tool.

**Friday, August 8:** It’s just another day at sea. About the only exciting thing that happened today was the crew fired some water slugs out of the torpedo tubes to test everything out. They used air to push the water slugs out and it bled back into the boat with a loud bang!! It really sounds like a cannon going off. We are expecting to reach the ice tomorrow night.

**Saturday, August 9:** What a day it was! I hardly know where to start. First, we were told the Nautilus had made it from Pearl Harbor and under the North Pole and came out from under the ice cap this morning. I knew this was underway as my Autonetics group leader, Tom Curtis, was on board with another N6A Autonavigator. But, this was very disheartening news for the USS Skate crew. Talk about a loss of morale! You could hear a pin drop at dinnertime. The crew had all expected to be first to the North Pole, but now we are going to be second to the Nautilus again.

We are currently surfaced off the coast of Spitzbergen, Iceland, which is our last land fix before going under the ice cap.

We saw a Russian boat while on the surface. We had “Battle Stations” alert, but they steered away from us. Just a fishing trawler, I guess. Our plan is to go straight to the North Pole and back out in about five days, and then go in a different way to map the ocean floor. The Navy says our job is the important job and the Nautilus was just for publicity. But while that is correct, we sure have a boatful of disappointed men tonight. The captain declared a holiday schedule to relieve the strain. That meant an afternoon movie at 1:30 p.m. and another one tonight.

Anyway, I sure am getting lonesome for my wife! That’s about all everybody talks about: their wife or girlfriend.

**Sunday, August 10:** We went under the ice cap this morning at 0530. Then about 10 a.m., we surfaced through a polynya, which is an open pool or lake found in the ice pack. These openings were located by our special reverse-mounted sonars pointed up on the bow of the Skate. Normal down-facing sonar are used to determine the depth of the ocean water. However, by looking up, we could not only find openings, but we could measure the thickness of the ice. We saw and took pictures of a giant polar bear. The crew ran some experiments before we dove back down under the ice and had church services in the afternoon. This time, instead of the captain leading the service, one of the Navy chiefs conducted the service. The movie tonight was “The Rainmaker” with Burt Lancaster and Katharine Hepburn.

We are heading due north for the North Pole, now at 85 degrees North latitude and 10 degrees East longitude. That means 300 miles to the pole. We should make that by late Monday or early Tuesday.

By the way, I was told today by one of the officers that I have one of the best beard growth on the boat. I haven’t shaved since we left New London and it’s really heavy, long, and streaked with grey!

**Monday, August 11:** We spent all day under the ice cap. Everything looks good “system wise”. Zane and I started working eight hours on and four off because of all the added calculations to be made closer to the North Pole.
The USS Skate surfaced near the North Pole in a “Lead” or “Polynya” between the Ice Ridges
they are giving us all kinds of foreign ports since we actually did get a lot more data, stay longer, etc. So now there is no telling when I’ll get home! But at least I plan on calling home from Norway on the telephone.

**Thursday, August 21:** What a day! Today was Immunization Day. All those overseas shots you hear about, well, I got all four: Tetanus, Small Pox, Typhoid D, and Typhus! I’m really stiff and rather woozy.

We were told to expect to get to Bergen, Norway Saturday afternoon about 4 p.m. and leave Sunday at 1 p.m. Then we will be on to Oslo, Norway.

**Friday, August 22:** My small pox shot is reacting and so is the typhoid. So that means I need a booster shot – lucky me! Tomorrow we get into port, so I started writing letters today. I wrote 10 so far. The Copenhagen stop has been cancelled, so maybe we will be home sooner than I expected.

The King of Norway is coming aboard tomorrow and is going to go on a short cruise with us. So I guess I’ll get to see him.

The rumor of the day has us going to Antwerp, Belgium to see the World’s Fair, which is there this year. We will have to wait and see.

**Saturday, August 23:** We docked in Bergen, Norway at 1455 hours.

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**Ports of Call**
Rather than detail our travels in Europe, I will simply list the ports we visited. From August 23rd until September 24th, we stopped in Bergen and Oslo, Norway; Denhelder, The Netherlands; Cherbourg, France; Zerbrugge, Belgium; Boston, Massachusetts; and lastly, we returned to New London, Connecticut.

**Trip Statistics**
- Time spent under the Polar Ice Cap
  - 10 days, 14 hours
- Distance traveled under ice
  - 2,405 miles
- Surfaced through ice
  - 9 times
- Thickness of ice
  - Up to 54 feet
- The crew of the *USS Skate*
  - 10 officers,
  - 87 enlisted men,
  - 9 civilians (technicians & scientists)
- Estimated time of travel
  - 54 days, 7 hours
- Estimated distance traveled
  - 12,000 miles
- Estimated distance submerged
  - 10,100 miles
- Estimated distance surfaced
  - 1,900 miles
- The *USS Skate*, SSN 578, was one year old prior to this voyage

**Results of the Cruise**
Scientifically, the *Skate’s* Arctic Cruise resulted in far more information about the North Pole region than was gathered by all previous expeditions combined.

For military men, the *USS Skate* proved that submarines can go under the polar ice pack, stay there, and surface regularly for operational missions.

For Autonetics, this voyage resulted in the capture of large Navy contracts to design and build the N7A SINS (Ships Inertial Navigation System). Today, these N7A Inertial Auto-navigators are found on every Navy submarine and most of the surface ships as well.

For the author, it proved I wanted to stay home with my family! Shortly after returning to Autonetics, I was transferred to the new Minuteman Proposal and Engineering Group. I worked on the Minuteman Systems for the next 28 years, retiring in 1986.

*About the Author:* Roger joined Autonetics in 1955 as a Research Electronic Technician after having served in the U.S. Air Force as a guidance system technician. His pursuit of a degree in night school at Long Beach City College was interrupted by the North Pole voyage. He advanced through several projects including the N2C, N5A/B, N6A, NS10, NS17, NS20 Inertial Navigation Systems and the NATDAN, Quaint, D37 Computers. His career spanned the MINUTEMAN I, II and III Programs. He retired in 1986 as a Project Engineer and currently resides in Ogden, Utah with his lovely wife of 60 years, June. All photos are from the Schmidt Collection.
Between them, Mike Aguilar and his wife, Rebecca Jaurequi Aguilar, worked at North American Aviation (NAA)/Rockwell/Boeing for over 75 years. They each started at an early age, began at entry-level positions for students, rose to management responsibilities, were part of the evolution of work-related technology over the last 50 years, and supported many of the company’s key space programs.

Mike began at NAA at age 21 in 1963 while going to college, and retired in 2001 as Business Development Director at Boeing Satellite Systems. He continues to support the aerospace industry, including Boeing, as a consultant providing proposal development services. Rebecca started at 18 right out of high school in 1973, and retired in 2011 as Manager Protocol Services and Field Marketing Support. Here are some of their reminiscences of working at Downey, Seal Beach, and Anaheim where they spent their careers, met, worked together as colleagues, became friends, and married.

Mike begins, “I grew up in the 40s in Los Angeles with Hopalong Cassidy and Flash Gordon as my heroes. When I was trying to figure out what I wanted to be when I grew up more, it didn’t seem practical to become a cowboy, but I thought someday I could be a space cadet. In the early 60s, I started going to college at California Polytechnic State University in Pomona, and needed a job to pay my way. I knew that a few years earlier this company in Downey, North American Aviation, had won the contract to design and build the Apollo Command and Service Modules to go to the moon, so I ran down there to ask if they needed help. It turns out that they were hiring anybody who knew how to use a slide rule or drafting machine, and, as an engineering major at Cal Poly, I could do both. I got a job on the spot."

“The job was,” Mike continues, “incorporating Engineering change Orders (EOs) on drawings for the Apollo Command Module on second shift after school as part of the NAA Engineering College Unit Program. This program included about 100 college students working at NAA part time while going to school. This College Unit program enabled the company to get relatively low cost technical support for its programs (I think I started at $1.25 an hour) and train potential future engineers in NAA practices and tools. The program helped students gain income and work experience.

“I was one of the most junior of the forty thousand plus people working at Downey at the time, and ended up spending about 38 years with NAA and its successor companies working on many internal and contract projects, but, as I approach my 50th year of being in the aerospace business, I look back on those days in Building I off Lakewood Boulevard working on the Apollo Program as among the most significant and memorable of my career.”

Mike further recalls the early years working on Apollo: “Designing the Apollo moon mission hardware was quite different then than it would be today. There were no desktop computers for calculations or drawings. I used a drafting machine to make drawings, and my slide rule and mechanical calculators for computations. My cell phone today has more computational power than the computer aboard the Apollo Command Module, and Computer Aided Design (CAD) software has made drafting machines antiques.

“Besides the technical tools,” Mike continues, “the work environment was also quite different. We all wore ties with our white shirts to the office, worked in very large bays with row after row of desks and drafting tables, and were very serious as we went about our jobs. We were going to the moon before this decade was over and had to beat the Russians doing it. There was a sense of urgency in what we all worked on; a lot had to be accomplished in a very short amount of time. Like I said, I was a small part of the enterprise, but I took it quite seriously, and like everybody else on the program, had a lot of pride and self satisfaction for being part of the grand adventure.

“The Downey plant went through a lot of expansion in the early Sixties to accommodate the buildup of the program and hardware. I remember taking a shuttle bus around the plant going to different buildings. I worked in a temporary trailer for a while. The facility was still full of people at night, with many others besides me working second shift.”
I worked on Apollo from 1963 to 1965, and took a military leave of absence from 1965 to 1967 to serve aboard a Navy destroyer escort patrolling the coast of Vietnam to interdict contraband going from North to South. While onboard, I did my best to keep up with events back home, especially the progress on Apollo, but current news was hard to come by.

“I was deeply shocked and saddened when I heard about the fire in the Apollo I Command Module in January of 1967. In retrospect, the mistakes in design, production, and management made by NAA and NASA that led to the disaster were likely a consequence of the extremely aggressive schedule the program was working on. When I returned from Navy active duty in June of 1967, I resumed work on the Block II Apollo capsule, and continued with school.

“I graduated in 1969 with a BSEE and was hired on as a full time engineer. Design and production work on Apollo was winding down, so I began working on R&D programs in advanced technology for future space missions. NAA had become North American Rockwell (NAR) and was thinking about new businesses to enter, one of which was space satellites. In the early 70s, I was transferred to Seal Beach to help start up the satellite business. About this time, my future wife, Rebecca, joined the company.”

About her introduction to NAR, Rebecca says, “The beginning of my time in Downey started when I was a sophomore in High School in 1971. At the time, the company had an industry partnership with education called the ACT (Advanced Career Training) program. I was a promising high school student and they had volunteer employees provide classes in subjects and with equipment not readily available in schools. It was a perfect match. I did well in their self-paced program learning to use new office equipment, and they took notice.

“By the time I graduated from high school, my college plans had taken a different route as my father had suddenly passed away. Now here I was, 18 years old and needed to work full time and go to college part-time. So I pulled out the want-ads and took my big red marker, confidently circling all the positions for which I thought I would be qualified.

“My first interview was a success, and I was offered a job as a receptionist in a small company. I was excited about my good fortune, but quickly let them know that there was ‘only one thing wrong.’ When they asked what that was, I said, ‘I’d like to make more than $1.75 an hour.’ That was minimum wage back in 1973, and here was a high school graduate with little experience asking for more. They asked me to work for them a week and they would see if I was worth more. On Friday I marched back into their office and said, ‘Well? ’ and they replied, ‘You’re right, how much do you want?’ That is when my real brains kicked in and I asked for 25 cents. I wanted to make $2.00 an hour.

“They readily agreed and I was a happy girl. I’d like to clarify that I’m now a lot smarter and I’ve been humbled since then. Two weeks into the job, I received a call from Ed Fausch whose opening line was, ‘Come back to work for North American!’ Still elated over my $2.00, I didn’t let him explain any of the particulars. I only remember saying, ‘Oh no, Ed, I have a job.’ Thanks to his tenacity, he called back a couple of weeks later and wanted to talk to me about a new project opportunity. I reluctantly agreed to listen. He told me this was a great time to join the company since it was the start of the Space Shuttle program. I would have an exciting job and be a part of history. ‘The Shuttle program will change the world,’ he said. And then he casually mentioned that the starting pay would be $4.86, to which I exclaimed, ‘I’ll be right over!’

“I was in the first wave of new hires after a major downsize in the workforce after the Apollo program. I began in the Communications Department as a typist on the magnetic tape Selectric typewriter that I learned to use in the ACT program. It was quite a revolutionary machine back in its day. But I quickly became restless with routine clerical work and began to explore opportunities to do other things. I ended up in a very dynamic and busy department called Management Communications that was anything but routine. I loved it!

“It truly was a part of history. I watched the Shuttle being built piece by piece. I was a part of the planning team for Shuttle launch/landing special events. When Boeing acquired Rockwell’s Space and Defense organizations, they created a Space and Communications Headquarters in Seal Beach. I was asked to join the corporate team and be responsible for Customer Relations of various Boeing business units to ensure integrated and consistent presence at industry events. My responsibilities included supporting management, dignitaries, customers, employees and community groups. I served on the Boards of Directors for five customer and industry organizations. I was privileged to work with many company and customer executives, including many astronauts.

“I eventually had the opportunity to lead a great professional team in the organization, and planning of special events for

Rebecca with NAA President Lee Atwood
Rebecca meeting with NASA Astronaut and U.S. Senator John Glenn

domestic, international, government and commercial customers. I managed customer activities for air and trade show support in Amsterdam, Paris, Toulouse, London, Tokyo, Hannover, Madrid, Geneva, Melbourne, Brisbane, Sydney and Singapore. I also supported technical meetings, media tours and other senior-level customer activities that helped position Boeing as a premiere aerospace company.”

“Rebecca was instrumental in setting up meetings, interfacing with her customer counterparts, and working the logistics behind the scenes at industry events we both supported. We did many other work-related activities, like representing the company at black tie dinners, doing community events such as cleaning up the Bolsa Chica wetlands in Huntington Beach and working on the Boeing Rose Parade Float.”

Rebecca continues, “As I travelled around the world, I realized that appropriate protocol was the key to successful business relationships. I was supporting senior leadership at Boeing, their industry counterparts, customers, members of royal families, and high-ranking military officers. I began to learn as much as I could about doing business in other countries, with the military, and about royal protocol. I took special training and was certified by The Protocol School of Washington, D.C. as a Corporate Etiquette and International Protocol Consultant. My hands-on experience with domestic and international commercial and government customers created the ideal platform for learning. Understanding how important this knowledge base was, I began to teach protocol internally for Boeing and externally for other audiences, which I still do.”
Rebecca concludes, “I spent my 38 years at NAR/Rockwell/Boeing in Communications, Business Development and Customer Relations and couldn’t have asked for a better career. Along the way I earned a B.A. Degree in Communications from California State University, Fullerton. I retired in 2011 as a Manager of Protocol Services and Field Marketing Support where I had the opportunity to manage special projects and events such as Air Force Week, Centennial of Naval Aviation celebration activities and the IMAX Rescue premieres. I have a lot of great memories of the people and projects I worked with, and still keep in touch.”

A Final Editorial Note: We thank Mike and Rebecca for this splendid start on what we hope will become a series of articles. We wish every happiness to this couple residing in Buena Park, California.

Congratulations and Best Wishes to

Dale and Peggy Stinson of Sun City, Arizona celebrating their 58th Wedding Anniversary

Winston and Pansy Greene of Valencia, California celebrating their 55th Wedding Anniversary

May you have

Enough happiness to make you sweet,
Enough trials to make you strong,
Enough sorrow to keep you human, and
Enough hope to make you happy.
YOU COULD HAVE HEARD A PIN DROP!

At a time when our President and other politicians tend to apologize and denigrate our Country’s prior actions, here is a refresher on how some of our patriots handled negative comments about our Nation in the past.

There was a conference in France where a number of international engineers were taking part, including French and American. During a break, one of the French engineers came back into the room saying, “Have you heard the latest dumb stunt Bush has done? He sent an aircraft carrier to Indonesia to help the tsunami victims. What does he intend to do, bomb them?”

A Boeing engineer stood up and replied quietly, “Our carriers have three hospitals on board that can treat several hundred people; they are nuclear powered and can supply emergency electrical power to shore facilities; they have three cafeterias with the capacity to feed 3,000 people three meals a day; they can produce several thousand gallons of fresh water from sea water each day, and they carry half dozen helicopters for use in transporting victims and injured to and from the flight deck. We have eleven such ships. How many does France have?”

You Could Have Heard A Pin Drop!

Robert Whiting, an elderly gentleman of 83, arrived in Paris by plane. At French customs, he took a few minutes to locate his passport in his carry on. “You have been to France before, monsieur?” the customs officer asked sarcastically. Mr. Whiting admitted that he had been to France previously. “Then you should know enough to have your passport ready.”

The American said, “The last time I was here, I didn’t have to show it.”

“Impossible! Americans always have to show their passports on arrival in France!”

The American senior gave the Frenchman a long, hard look. Then he quietly explained, “Well, when I came ashore at Omaha Beach on D-Day in 1944 to help liberate this country, I couldn’t find a single Frenchman to show a passport to.”

You Could Have Heard A Pin Drop!

God, I love this Country!

“Politics is supposed to be the second oldest profession. I have come to realize it bears a very close resemblance to the first.”

— Ronald Reagan
FROM THE STREETS TO THE STARS
The Story of Hank Dinenno as told in his own words

Growing up in a poor, crime infested community as a hard core juvenile delinquent and gang leader, made Henry Dinenno’s parents’ dreams for a better future a lost cause. This book describes the life altering events that influenced his transition from this violent beginning to the pursuit of advanced education and finally to increasing technical and management responsibilities on the Apollo and Space Shuttle programs. It provides an insider’s perspective on how NASA and North American dealt with successes and failures during the unbelievably exciting launches at the Kennedy Space Center. It culminates when, as Vice President of Advanced Programs and Business Development for the Space Systems Division, he received a special invitation to the Planetary Congress of the Association of Space Explorers where he spent several days with more than 80 astronauts and cosmonauts that were truly the stars of his world.

“From the Streets to the Stars” is available through Amazon (www.amazon.com), Barnes & Noble (www.barnesandnoble.com) and local book stores.

Former NAA KSC Launch Team members met on February 9, 2012 for their monthly luncheon.
Kneeling left to right: Carl Robb, Jim Mewborn, Jerry Sheehan, Ed Williamson and Dave Sanders
Dear Ed,

Sat down this morning with my coffee and pumpkin scones to read the NAA Retiree Bulletin. In short, the Engineer’s View reminded me why I, ever so rightly, went to work for Rockwell International almost 30 years ago. Within a few short years, engineers designed and built a reusable manned space vehicle that started over EIGHT presidencies and EIGHTEEN NASA administrators ago. As Larry Korb basically stated, the Orbiter’s design was faultless in both accidents. The engineering principles and architecture the Orbiters were built on are as sound today as they were back then. Two things I remember and carry with me are – how redundancy was built into the hardware and the avionics using every methodology possible – from physical location, software, MSIDs spread across the MDMs, electrical, pyro etc. Spreading the MPS/SSME ATVC and engine control across pneumatics, hydraulics and avionics is an incredible design masterpiece. The other is described in both the Challenger and Columbia accident reports detailing the last seconds of flight from a command and control standpoint. Both Orbiters tried – as if human – to save themselves. Not one command sent contributed to the end result. This is a tribute to the engineers who – in my mind – created life, not the politicians and NASA public affairs people, who starved the budget and created unrealistic expectations.

— Gregory Koch, Oviedo, FL

Ed’s Ans.: Wow! Greg, I couldn’t have said it better! You and Larry would have made a couple of good lawyers for North American Aviation. Perhaps, we would still have been NAA.

Dear Ed,

My Dad was F. W. Schmitt. He worked for Berliner-Joyce which became General Aviation and then North American Aviation. We lived in Baltimore, Maryland. One day in 1935, he came home and told us that we were moving to California. The movers came and packed our furniture. We had no car so a friend of my Dad’s, Dutch Kindelberger, loaned us his Buick to make the trip. I was 9 at the time and I watched NAA grow into the best aviation firm ever!

— Bill Schmitt, Chatsworth, CA

Ed’s Ans.: Your story was too good to pass up, Bill, so we called you and you came through for us in this issue!

Dear Ed,

I retired from the Columbus Division in about 1968 after some 13 years of service. I am 91.

— Jim Haywood, Franklin, TN

Ed’s Ans.: We are always happy to hear from our 91 years young readers. Hang in there and let’s hear from you at 92!

Dear Ed,

Enclosed is my check for 2012. At my age, 96, I only plan a year at a time. Still going strong and got my license renewed for 5 more years. I really enjoy the Bulletin and didn’t realize that the company had so much talent. But, after all, I was just a bean counter.

— Walter Christianson, Auburn, CA

Ed’s Ans.: Nobody at North American Aviation was ever a “just”. If you were a bean counter, you were the best damned bean counter around!

Dear Ed,

Larry Korb’s article in the Winter Issue was right on with his “fire back” to former NASA Administrator Michael Griffin!

— Alex McCool, Huntsville, AL

Ed’s Ans.: Some folks think it’s safe to lambast North American Aviation because the company disappeared fifty years ago. Well, Hello! There still are some NAA types around that are full of P & V and armed with the facts!

Dear Ed,

Larry Korb’s Shuttle article in the last issue was outstanding!

— Lee Solid, Merritt Island, FL

Ed’s Ans.: Same as above!

Dear Ed,

I want to salute Larry Korb and to inform him of someone else of considerable power is in his corner. I am reading a book entitled “GABBY”, written by Gabrielle Giffords and Mark Kelly, the commander of STS-134 and former NASA astronaut. In Chapter 10, titled “The Ace of Spades”, he writes these words, “Like the Challenger accident seventeen years earlier, the loss of Columbia came in the wake of signs that were ignored. This wasn’t just a random accident. NASA certainly could have done a better job of addressing the long-term problem of foam releasing from the external tank. While the space shuttle is an incredible complex machine that can fail in thousands of catastrophic ways, it sometimes tries to tell you ahead of time what is coming. I think this was one of those times. We had seen foam problems again and again on successive launches and done little about it. Poor decision-making contributed to both tragedies, Challenger and Columbia.”

This comes from a well respected astronaut and is published in a book that might, just might, be read by the general public, rather than hidden in some investigative report and filed away. That being said, you might feel moved to publish this letter. Thank you.

— Russel Munroe, Orange, CA

Ed’s Ans.: Damned straight! We will publish your letter and we thank you for bringing the information in Mr. Kelly’s book to our attention.

Dear Ed,

Let me add to the voice of many that YOU make the BULLETIN what it is – GREAT! I would be honored to sit at your table at the 50th Bald Eagles Reunion, thanks Old Friend!

— Pete Magoski, Buena Park, CA

Ed’s Ans.: We go back over 50 years, Pete. The honor is all mine. I look forward to breaking bread with you.
Dear Ed,

Thank you for including me in your distribution of the latest issue of the NAA Retirees Bulletin. The story by Larry Korb on the Space Shuttle Challenge was riveting and answered some questions about the Shuttle’s development that I thought would forever remain a mystery. It is clear that the “Greatest Generation” of Aerospace had its roots somewhere near Seal Beach. My hat’s off to the men and women who built that fantastic vehicle and I am proud to include myself amongst the few who had the distinct privilege to fly one.

— Chris Ferguson, Houston TX
(Captain Christopher Ferguson, STS-135 Commander)

Ed’s Ans.: Thank you for your kind words. Our roots started at the Los Angeles Division, moved on to Downey-Space Division, Autonetics, Rocketyne, Atomics International, Edwards AFB, JSC, KSC and dozens of other satellite stations. The people were outstanding and created inventions on a schedule! 

Life isn’t about waiting for the storm to pass…
It’s about learning to dance in the rain!

The Pleasure of Your Company Is Requested at the 50th Golden Anniversary Bald Eagles Reunion to be held on Saturday, April 28, 2012 at the Proud Bird Restaurant
11022 Aviation Blvd. (at 111th Street)
Los Angeles, CA

Attendance Cost: $33.00 with Advance Reservation
$35.00 at the Door – Name Badges and Meal Tickets Given at Door

Doors Open for Social at 10:00 A.M. Seating for Luncheon at 12:00 Noon

The Honorary Speaker will be James Albaugh, Executive Vice President of The Boeing Company and President and Chief Executive Officer, Commercial Airplanes. He will be providing an overview of the Boeing 787 “Dreamliner”.

Our special guest will be Martin “Buzz” Holland of the original 50 families that made the journey from Dundalk to Inglewood.

The meal choices are Prime Rib, Chicken or Vegetarian. Please indicate your choice on your check. Please make your checks payable to the Bald Eagles, Inc. and send them to:

Cathy Baker
Bald Eagles, Inc.
16372 Lakemont Lane
Huntington Beach, CA 92674
Phone: (714) 847-1678

Want to sit with your friends? Organize a group of eight and order tickets in one batch!
Have no friends? Come anyway and make new friends!
ASTRONAUT JANICE VOSS, 55 – a veteran of five spaceflights and a former science director for a NASA exoplanet-hunting spacecraft, Janice passed away on February 6, 2012 of cancer. Her first mission, STS-57, aboard Endeavor, included biomedical and material science experiments in the pressurized Spacehab module mounted in the payload bay. Other flights included two rendezvous missions with the Russian Mir space station and a complete digital topographic map of the Earth mission. In total, Janice logged over 49 days in Space, traveling 18.8 million miles circling the Earth 779 times. She received her doctorate degree in aeronautics and astronautics from MIT.

RAIKLIN, HAROLD “HAL”, 91 – passed away on January 3, 2012 in Long Beach, CA. After serving six years in the USAF, he earned his B.S. and M.S. degree in Mechanical Engineering at MIT. Joining NAA, his technical leadership extends to the B-45, F-86, F-100, XB-70 and B-1 aircraft and the Saturn S-II Booster. Retiring from NAA/RI in 1982 after 33 years, he had served as Vice President of Engineering and Research, North American Aircraft Operations and as Vice President Space Division and Program Manager/President Saturn S-II/Apollo. In 1976, he was the recipient of the prestigious Robert J. Collier Trophy in recognition of his magnificent work on the B-1.

ALPERT, ROBERT A. “BOB”, 83 – of Henderson, NV, collapsed at an IBM seminar on October 26, 2011 at the Mandalay Bay Hotel and passed away in the hospital of cardiac arrest. Bob had served in the Korean conflict and retired from Space Division in 1990 with 28 years of service on the Apollo and Model Cities programs. He had celebrated his 60th Wedding Anniversary on August 19th with his loving wife, Mildred.

ANDERSON, BEVERLY A., 80 – passed away in the hospital in Henderson, NV on November 17, 2011 after colon surgery. Serving at Autonetics and Seal Beach, Beverly was one of the fastest typists in the Company, often completing the assignment before the submitter returned to his desk. Retiring after 30 years of service, she loved the nickel machines and bingo games at the Las Vegas casinos. Good Night Beverly!

BAKER, PATRICIA J., – of Hawaiian Gardens, CA, passed away peacefully on December 1, 2011 just two months after being diagnosed with cancer. Pat had a lifelong career as a secretary in Downey, retiring in 1996 with 34 years of service. She was always a generous person and a fun loving spirit.

BOWMAN, ROBERT L. “BOB”, 77 – died in Anaheim, CA on January 18, 2012. After serving with the 3rd Marine Division, Bob came to Space Division in 1960 and worked in the Clean Room as a tube brazer for fluid systems on the Apollo and Shuttle programs.

ETZEL, CHARLES W. “CHUCK”, 80 – passed away on September 13, 2011 at home in Hays, KS. Chuck joined NAA in 1951 and advanced from the Machine Shop through Lofting to Design. He worked on the B-70, Apollo/Saturn and B-1 programs and retired from Space Shuttle GSE in 1986 as a Design Engineer with 35 years of service. He is survived by his loving wife, Bettye, who is also an NAA/RI retiree with 29 years of service.

GEJER, JOHN H., 92 – passed away peacefully in his home in Hawthorne, CA on December 8, 2011. John came to LAD in March 1942. In April 1943 he joined the U.S. Navy and served aboard the destroyer USS Hunt in the South Pacific. At the end of hostilities, he returned to NAA and served for 35 years until retiring from Rocketdyne in 1977. He was a Life Member of the Death Valley ’49ers. John is survived by the love of his life of 70 years, Margaret.

GOSS, JOSEPH R., 82 – of Huntington Beach, CA passed away following heart valve surgery. Joe served in Korea in 1951 and earned a B.S. in Engineering from USC in 1959. While at USC, he worked summers at Rocketdyne on the J-2 Rocket Engine and advanced with growing responsibilities at LAD. He was a B-1 Proposal Manager and upon contract award became a Vice President. He retired in 1996 and is survived by his loving wife of 57 years, Janice.

HENRY, ROBERT “BOB”, 81 – of Prescott, AZ died in his sleep on January 17, 2012. Bob had 25 years of service on the Saturn II and Space Shuttle projects at Space Division when he retired in 1989. He was responsible for the Shuttle Main Propulsion Liquid H₂ and O₂ feed lines. Bob is survived by his loving wife, Dorothy.

LEVY, WILLIAM J. “BILL”, 78 – died of lung cancer at his home in Orange, CA on December 15, 2011. He retired in 1990 after 29 years of service with NAA/RI Defense Electronics in Anaheim, CA. He had been very
active with the Orange Rotary Club and traveled extensively with his loving wife of 49 years, Ruth.

**LLORENTÉ, DAVID, 82** – died on January 12, 2012 in Webster, TX following an extensive illness. David spent his childhood in the Philippines, attended grade school in Japan and high school in Carmel, CA. After serving in the U.S. Army Air Corps, he graduated from Northrop Institute and joined NAA as a Technical Representative. He later transferred to Space Division in Downey and moved on to NASA/JSC and NASA/KSC. He was named Director of Quality and Reliability for NAA/RI on the STSOC program, retiring with 35 years of service. He is survived by his loving wife, Ruth.

**ROBERSON, WILLIAM E., 82** – passed away on November 18, 2011 of Lou Gehrig disease. He lived in the South Bay area of Gardena, CA for 59 years. He retired from LAD in 1984 with 31 years of service as a welder on several programs including the B-1. He is survived by his wife of 37 years, Bernice.

**PIZULA, NICKOLAS “STEVE”, 87** – died on December 10, 2011. Steve served proudly in the USMC during World War II and worked for many years as a computer operator at NAA/RI. He had a passion for golf and will be missed by his family and friends.

**PROCTOR, EDWARD G. “JERRY”, 81** – passed away on February 24, 2011 at his home in Sequim, WA with his wife and daughter at his side. Jerry retired in 1990 from LAD with 30 years of service. He was an avid golfer and enjoyed his days on the links. He is survived by his loving wife, Hazel.

**ROBERSON, WILLIAM E., 82** – passed away on November 18, 2011 of Lou Gehrig disease. He lived in the South Bay area of Gardena, CA for 59 years. He retired from LAD in 1984 with 31 years of service as a welder on several programs including the B-1. He is survived by his wife of 37 years, Bernice.

**SCHUETZ, PHILLIP H., 76** – passed away on January 22, 2012. Phil retired in 1997 from Space Division where he served in Structural Dynamics conducting vibration and acoustic tests on Apollo and Space Shuttle structures. He is survived by his wife, Helen.

**SEARS, ROBERT E., JR., 80** – passed away on December 24, 2011 from a non-malignant Meningioma Tumor of the Frontal Lobe which was diagnosed in 1993. Bob joined NAA Columbus in the late 1950s, transferred to NAA Cape Canaveral in the 1960s, came to NAA Downey and NAA Palmdale in the 1980s and, finally, retired from NAA/RI at Vandenberg AFB in 1990 with 35 years of service. He is survived by his loving wife of 50 years, Dolores.

**ZUCKER, HERBERT W., 83** – passed away on January 1, 2012. After service in Korea, Herb joined NAA in 1953 and retired with over 37 years of service. He is survived by his wife of 51 years, Thelma.

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**PAX DOMINI SIT SEMPER VOBISCUM**

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“When I stand before God at the end of my life, I would hope that I would not have a single bit of talent left, and could say, ‘I used everything you gave me.’”

— Erma Bombeck
As Chief Engineer of the Douglas Aircraft Corporation, Dutch Kindelberger poses with his new 1929 Oldsmobile in front of a Douglas C-1 Cargo plane. Two C-1s were used as “tankers” in the 1929 record endurance flight of the U.S. Army Air Service Fokker C-2 “Question Mark”.

Photo from the Boeing NAA History Files