

Flight Line

Southern California Wing
455 Aviation Drive, Camarillo, CA 93010
(805) 482-0064



COMMEMORATIVE
AIR FORCE

January, 2021

Vol. XL No. 1

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Tinker Belle is flying again

Renew Your 2021 Membership — see form on page 3

Happy New Year - 2021!



Photo by Steve Lewis

CAF So Cal Wing's Ramp during "Wings Over Camarillo" 2017

To Educate, Inspire and Honor Through Flight and Living History Experiences

January 2021

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
MUSEUM WILL BE CLOSED UNTIL FURTHER NOTICE DUE TO COVID19 EPIDEMIC					1 New Year's Day Museum Closed	2 Work Day
					8	9 Work Day
3	4 Museum Closed	5 Work Day	6	7 Work Day	10	11 Work Day
12	13 Museum Closed	14 Work Day	15	16 Work Day	22	23 Work Day
17	18 Museum Closed	19 Work Day	20	21 Work Day	28	29 Work Day
24	25 Museum Closed	26 Work Day	27	28 Work Day	30	31 Work Day
31	MUSEUM WILL BE CLOSED UNTIL FURTHER NOTICE DUE TO COVID19 EPIDEMIC					

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Southern California Wing
455 Aviation Drive
Camarillo, CA 93010

2021 WING MEMBERSHIP RENEWAL FORM

January 1, 2021

Dear CAF Member,

We hope that you will renew your membership in the Southern California Wing of the Commemorative Air Force. We are looking forward to your rejoining our wing, since we expect exciting things to happen in 2021 and beyond.

We are one of the leading wings in the CAF with more than 250 Wing members and 12 assigned aircraft. Our museum has become a major attraction in Ventura County and both attendance and museum income have risen steadily. Our plans are to continue this growth and we want you to be a part of these exciting happenings.

To renew your membership, just print this page, complete the information requested, enclose your check payable to the Southern California Wing, and return to:

CAF Southern California Wing
455 Aviation Drive
Camarillo, CA 93010
Attn: Personnel Officer

Any contribution in addition to your \$50.⁰⁰ annual dues will be greatly appreciated. Contributions are welcome to help us complete the many projects we are undertaking, such as upgrading the museum facility; the F8F Bearcat restoration, or any other project you may wish to support.

If you joined the Southern California Wing as a new member in October, November, or December of 2020, your dues are considered paid for 2021, but any contribution to any of our projects that you wish to make will be greatly appreciated.

Sincerely,

Jason Somes

Jason Somes, Wing Leader

2021 Wing Dues	\$50. ⁰⁰
Hangar/Museum Building Fund	_____
F8F Bearcat Restoration	_____
Other _____	_____
Total	_____

Name: _____

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CONTRIBUTIONS TO THE CAF ARE TAX DEDUCTIBLE

The Evolution of Bombers – First Flight to the Next Flight

By Anne Constantin Birge

Birds do it naturally.
Some mammals, reptiles and marsupials
can glide.
Humans have always dreamt to be airborne.



In August, 2020, my husband Ray and I saw a haunting billboard – and fell in love with it. The billboard for the newest Northrop Grumman aircraft's introduction stated:

It's detectable. Until it's not.

I was hooked at the Northrop Grumman's promise and at the shadow of the future in aviation. I needed a picture of that billboard to show my son, an Air Force and Desert Storm veteran. When I finally located a blurry photograph of the billboard on the internet, I texted it to my son, with the comment that it showed the ghost (spirit) of Northrop Grumman's B-2 *Spirit* bomber. As one of our extended family's rocket scientists, he wrote back that the billboard possibly depicted their new B-21 *Raider* bomber, currently in the design phase. It hasn't even had its first flight. He also said that the *Raider* probably differed from the *Spirit*, as it has none of the *Spirit's* jagged wing points.

I couldn't resist practicing the "art of snappy comebacks," and gleefully wrote back, "Since it's still in the design stage, that means that someone has the *Raider* on paper," and I attached a picture of a black paper airplane. Having fine-tuned the "art of snappy comebacks" himself, my son wrote, "If the Chinese release a paper-plane-looking bomber, then we'll know they fell for the misin-formation." Since there's not much written about the *Raider*, except what they hope to achieve with it, I thought I would

tell the story of the evolution of bombers – from the first to the next, from my perspective.



From 1903 to today, bomber design has progressed at the speed of sound. The first bomber was the **1913 Bristol Aeroplane Co.'s Bristol T.B.B. trainer**. According to Wikipedia, 54 were built between 1913 and 1916. They weighed about 970 pounds and could fly 65 to 80 mph. The aircraft was used briefly as a bomber by the Royal Naval Air Service.



Fast forward through WWI's and WWII's multitude of bombers to 1952's Boeing B-52 *Stratofortress*, a long-range, subsonic strategic bomber. Although 744 were built from 1952 to 1962, there are only about 58 still in the air. Empty, these high-flying beasts weigh 172,000 pounds and have a max speed of 632 mph. In 1962, the B-52H cost \$9.28 million, which is equal to about \$80 million in 2020 dollars.

Many aviation aficionados learned about bombers during their fanciful childhood aviator/aviatrix dreams of bombing classmates, teachers and movie-goers below the balcony, with stealth paper airplanes. But, long before any of the current bomber builders were born, Wilbur and Orville Wright made aviation history when they flew their home-made, heavier-than-air, mechanically propelled 604 pound airplane called the *Wright Flyer*. At 10:35 am on a bitter cold December 17, 1903 morning, at Kill Devil Hills, NC, Orville flew the first sustained flight for 12 harrowing seconds, At 6.8 mph (34 total air speed, into a 27 mph headwind).

Though the *Wright Flyer* was not a bomber, with the onset of WWI, Orville lamented that aircraft were used for destruction, but was also aware of the good they provided. Forty-one years after his first flight, Orville enjoyed his last flight in a 79,000 pound Lockheed *Constellation*, with its 123-foot wingspan – which was longer than the 120-foot distance he had covered in the *Wright Flyer*. In October, 1947, at age 76, just 3 ½ months before his death, Orville read that U.S. Air Force pilot Chuck Yeager had piloted *Glamorous Glennis*, a Bell X-1 rocket-powered research plane to a speed of 662 mph, at which point he broke the once-thought-to-be-deadly *Sound Barrier*. Six years after Orville's death, Yeager flew an X-1A rocket plane 1,650 mph! That's a bit faster than the *Wright Flyer's* speed fifty years earlier.

Bombers began with the T.B. 8 trainer and the few in WWI, and transitioned through the B-17, the B-24, B-25, B-26, A-20, the B-29 during WWII, up to the 1952 B-52 *Stratofortress*, the 1973 B-1 *Lancer*, the 1997 B-2 *Spirit* – and now the Northrop Grumman B-21 *Raider*. However, in order to properly address the evolution of bombers, everyone must know about the *original bombers*.

The Paper Airplane

Although China was first to document the paper-making process, developed during the Eastern Han Period (25 AD to 220 AD), no one knows when the first paper airplane was made. My guess, as soon as the first sheet of paper was handed to a child. Many children since then have constructed perfect paper airplanes that dive-bombed off second-story movie balconies or flew across classrooms – while Mrs. Williams' back was turned. Think she didn't know what her young aviators were doing, as she smiled under the white bloom of chalk dust coming off the blackboard?

Thankfully, the only fuel required for the original, handmade, very light (0.16 oz.; \$0.07 per sheet in 2020 cents), stealth paper bomber was a cardboard pint of chocolate milk for her pilot. Sadly, estimates report that possibly quintillions were built – and all have been scrapped. Gone to the Great Paper Bomber graveyard in the sky.

But children weren't the only ones to make paper airplanes. Beginning in 1930, Jack Northrop, co-founder of the Lockheed Corporation, used paper airplanes as test models for his larger aircraft. Unlike Jack, we didn't spend much time designing our bombers – 45 to 60 seconds, max! Today, kids of all ages can use computer-added design (CAD) to achieve maximum flight of their perfectly designed paper airplanes.

The Balsawood Glider

As kids, very few of us knew about *Wikipedia's* information: "*unlike balsa gliders, paper gliders have a far higher strength-to-thickness ratio. A sheet of ...laser printer paper has an approximate in-scale strength of aircraft-grade aluminum sheet metal, while card stock approximates the properties of steel!*"

In spite of now knowing about that strength, the need for speed and a more prolonged flight, we graduated to the balsawood glider.

According to *oldwdoodtoys.com*, the *Sleek Streek*, produced from the early 1950s into the 1970s, cost around \$0.10 in the 1950s. *"Its outstanding performance was credited to great wing stability, perfect balance and the remarkable efficiency of its propeller. A confirmed pilot report indicated a Streek was spotted cruising gracefully in a thermal at an altitude of 5,000 feet."*



David C. 'Dave' Pecota
dcpecota@earthlink.net
Sleek Streeks

Today's 0.32+ oz. balsawood glider enthusiast's knowledge of airfoils and Bernoulli's Principle of the vertex of the dihedral angle had absolutely no bearing on our six-decades-ago hopes for a successful *first flight* of our new and much-cherished balsawood glider. Nope! We just hoped it would make it through at least part of the day without hitting the trunk of a 117-year-old Black Walnut tree – and possibly shattering into a million pieces. And, that we'd find the perfect spot on the glider to attach the penny we added for better stability – not knowing the correct term for that "sweet spot" was the aircraft's *center of gravity*.

Northrop Grumman B-21 *Raider*

For the last 117 years, more than a few paper airplane and balsawood glider pilots have been fortunate enough to join the military and fly their wondrous aviation marvels. But, even fewer will ever fly the U.S. Air Forces' next long-range bomber: Northrop Grumman's B-21 *Raider*.

The U.S. Air Force Global Strike Command's (formerly Strategic Air Command) name-the-bomber contest

resulted in 2,100 names being submitted. On September 19, 2016, the two men honored for the *Raider* name were:

Lt. Col. Jaime I. Hernandez, Commander – 337th Test and Evaluation Squadron, Dyess AFB, TX;
T/Sgt. Derek D. White, Emergency Mgmt. Craftsman – 175th Civil Engineering Squadron, Maryland Air National Guard.

On April 18, 1942, less than five months after the Japanese attack on Pearl Harbor, U.S. Army Air Forces' Lt. Col. Jimmy Doolittle (Medal of Honor recipient) and 80 aviators aboard 16 North American B-25 *Mitchell* bombers, launched off the deck of the 824-foot long U.S.S. Hornet – at night. They were on a surprise, one-way mission to bomb ten military and industrial targets on mainland Japan. As a result of that mission, those courageous aviators (77 of whom survived the mission) were dubbed *Doolittle's Raiders*.

Lt. Col. Hernandez and T/Sgt. White suggested the B-21 be named the *Raider* in honor of *Doolittle's Raiders*. At the September 19th gathering, Northrop Grumman also honored 101-year-old Richard Eugene "Dick" Cole, USAF, Lt. Col., Ret. (Distinguished Flying Cross with Oak Leaf Cluster). Jimmy Doolittle's co-pilot aboard Aircraft #1. As the last of the *Doolittle's Raiders*, it was apropos that he announced that Northrop Grumman's B-21 bomber was to be named *Raider*. Lt. Col. Cole died on April 9, 2019, at the age of 103.



USAF Photo by Ken LaRock
On April 18, 2017, the 75th anniversary of *Doolittle's Raid*, Lt. Col. (Ret.) Richard Eugene "Dick" Cole, one of the 80 *Raiders*, toasts the 79 *Raiders* who had died since their raid on Japan on April 18, 1942. It was at a ceremony held at the National Museum of the U.S. Air Force. Also attending: Jeff Thatcher, son of *Raider* S/Sgt. David Thatcher.



B-25 Mitchell bombers – *Doolittle's Raiders* – aboard U.S.S. Hornet enroute to a rendezvous with Japan.

The B-25 *Mitchell* bomber, named in honor of Gen. Billy Mitchell, was the first U.S. aircraft model to use a person's name, until the B-21 *Raider*, selected after a nick-name – *Doolittle's Raiders*. Little would anyone ever expect that 74 years after *Doolittle's Raiders* flew their B-25 *Mitchells* on a one-way mission, they would have their name and aircraft go full circle: *Doolittle's Raiders' Mitchells* to Northrop Grumman's *Raiders*.

B-25 *Mitchells* weighed about 23,300 pounds empty; had a maximum speed of 328 mph; and cost about \$109,670 in 1942 (\$1,751,200 today).

There are no current specifications as to the size and weight of the *Raider*. With the empty weights of the B-1 *Lancer* at about 192,000 lbs. and the B-2 *Spirit* at about 158,000 lbs., the *Raider's* weight could be somewhere within those figures. There were 21 Northrop Grumman B-2 *Spirit* bombers built from 1987 to 2000, at a cost of \$737 million each (\$2.1 billion today). We can be sure the B-21 *Raider* will be far more effective than its weight in paper airplanes (well over 15 million sheets of *plane* paper!). What will be the speed of the newest \$654 million stealth aircraft: subsonic? supersonic? light speed?? Only time (and a good radar gun, from behind an aged Black Walnut tree) will tell.

Northrop Grumman hasn't divulged to the world (or me!) an actual date for completion of the first B-21 *Raider*. Until then, millions of kids of all ages will continue to design their own stealth bombers from all varieties of paper. Some daring *Bomber Builders*,

born with internet genes, will find blue-prints to make origami-like bombers and purchase decals to affix to their a-bit-heavier-than-air bombers. Maybe, one of them will tell me why my carefully-constructed paper bomber always went in a perfect downward arc, when launched too quickly. Until then, what we know about the B-21 *Raider* will remain like my newest stealth \$0.07 laser-printer paper *ACB~5K Cutthroat Bomber*.

It is fitting that Oklahoma's Tinker AFB will "coordinate maintenance and sustainment of the B-21 *Raider*." Back in the mid-20th century, it was Tinker's aviators breaking the sound barrier over our 88-acre property east of Norman, OK that made our mother shake her fist at those new-fangled jets. Although the chickens refused to lay eggs for days after the ear-splitting, window-rattling and ground-shaking sonic booms, my twin brother and I squealed with delight, hoping the jets would perform an encore. With a fly-by of a B-21 *Raider*, that old homestead my once again echo with childhood laughter amid the Black-Jack Oaks of Norman!

Comment from Northrop Grumman:

"Northrop Grumman is proud to partner with the U.S. Air Force on the B-21 *Raider*. We're providing America's warfighters with an advanced aircraft, offering a combination of range, payload and survivability. As Air Force public statements indicate, we continue to make progress on the Engineering and Manufacturing Development scope of work for the B-21 *Raider*, and our first test aircraft is coming together in Palmdale, CA. Following key development milestones, scheduled to complete no earlier than 2022, the Air Force expects the B-21 to move into low-rate production."

In Appreciation: I owe a debt of gratitude to Eduardo Salinas, Public Relations at Northrop Grumman; Aeronautics Systems; and Northrop Grumman for their assistance in writing this article, and for the photo-graph of the billboard with the shadow of the B-21 *Raider* – "that's not detectable – YET!"



Illustration: Northrop Grumman

Yeager's First Jet



Art by Roy Grinnell
"Yeager's First Jet"

Chuck Yeager shot down an Me-262 - 6 Nov, 1944

Chuck Yeager had grown up poor on a hardscrabble farm alongside the Mud River in Myra, West Virginia. As a kid he butchered hogs, picked beans, and shot squirrels to help put food on the family table. In high school he was a fine athlete, playing on both the football and baseball teams. He was also a good student, particularly in mathematics. His hobby was tinkering with old cars.

In 1941, Yeager joined the US Army Air Corps as a private, serving at the Victorville, California airfield where he showed special aptitude as a mechanic. After two years he was promoted to sergeant and chosen for pilot training at Luke Field, Arizona, where Yeager's instructors said he was a natural. They taught him to fly in a Stearman biplane, and soon he was wringing it out in aerobatics. He won his wings and a promotion to Flight Officer on 10 March 1943.

Assigned to the 363rd Squadron of the 357th Fighter Group, Yeager moved up to flying P-39s at the Air Corps base at Tonopah, Nevada. Training there was rigorous. Some of his squadron mates washed out, and others were killed in accidents. Yeager's reactions to these misfortunes was a shrug. Anybody who bought the farm was "a dumb bastard," which was a fighter pilot's way of handling the possibility of his own death. One of Yeager's fellow pilots was Bud Anderson, who flew with him throughout the war and became a life-long friend. Together they and the other young studs often visited the bars and

warehouses in Tonopah, and sometimes raised enough hell to be chased by the sheriff.

The group was then sent to California for training to fly as escorts for bombers. While there Yeager met his future wife, Glennis Faye Dickhouse. "She was pretty as a movie star," he said, "and making more money than I was."

Next, the group moved to Casper, Wyoming for still more training. On 23 October 1943, Yeager very nearly lost his life when his P-39's engine caught fire and he had to bail out. He made a rough landing, fracturing several vertebrae. For a while it was questionable whether he would ever fly again, but he refused to give up, and after a long hospital stay convinced doctors that he'd fully recuperated. He rejoined his squadron just in time, for at the end of December, the 357th Fighter Group was shipped overseas to England.

Early in 1944 the unit became the first in the 8th Air Force to be equipped with Mustangs. The pilots received the rugged new fighters with great enthusiasm. Yeager thought the P-51 was the best aircraft he'd ever flown, and named his "Glamorous Glennis," after his girlfriend.

On his seventh mission, escorting bombers to Berlin on 4 March, he posted his first victory, shooting down a Bf-109. The following day he flew escort duty again, and over France he was bounced by three Fw-190s. The German pilots were old hands; while two of them attacked him from behind, the third dove on him and shot up his Mustang. The engine seized, and he bailed out. He landed in a forest, bleeding from numerous injuries, and hid there for two days.

During that time he had nothing to eat but a chocolate bar, and at night would sleep huddled under his parachute. On the third day he was discovered by a farmer, who put him in touch with members of the French Resistance.

On 30 March, with the help of the Maquis, Yeager escaped to Spain. It was a miserable trip, climbing over the Pyrenees in the freezing cold and sleeping in caves, while the Germans searched the mountains from the air in a Fieseler Storch. But he eventually

made it to Madrid, where he stayed until the U.S. consulate arranged for his return to England on 15 May.

His troubles were not over, however. He was told a regulation prevented anyone who had evaded capture from going back into combat. The theory was that if he were shot down again he might reveal information concerning the Resistance to the Germans. Yeager appealed directly to General Eisenhower, who cleared him to rejoin his group.

With his extraordinary flying skills, his 20/10 eyesight and his aggressiveness, Yeager established an excellent record. He once downed five German fighters in a single battle. And on 6 November 1944, he saw an Me-262 for the first time.

That day Yeager's group, led by Major Robert Foy, was returning from a mission to Germany. The fighters were escorting B-24s that had bombed factories near Minden, 70 kilometers east of Osnabrück. With the 357th was another fighter group, the 361st, also flying Mustangs.

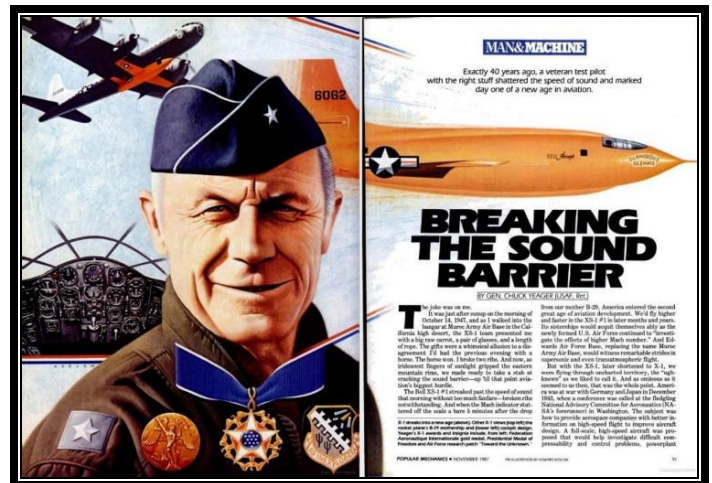
Once the bombers reached a safe area, the two fighter groups left them and split up. The pilots of the 357th swung west, heading back to base, and a few minutes later were attacked by five Me-262s of Kommando Nowotny. Yeager turned to meet them. He'd heard about the new type of aircraft, but actually witnessing their speed was a surprise. One of them fired at him and missed, and as it hurtled by, he opened his throttle and put his Mustang into a vertical bank. When he came about he fired his .50-caliber machine guns and got a few strikes on the jet. Moments later the enemy aircraft vanished into cloud.

In chasing the Me-262, Yeager had become separated from his wingman and the other Mustangs in his group. Now he was alone. He eased back on his power settings, and again turned for home.

As he flew over Achmer, he noticed what he thought was a well-disguised airfield with an extremely long runway. He decided to have a closer look, and descended toward it. His combat report described what happened next.

"I spotted a lone 262 approaching the field from the south at 500 feet. He was going very slow, about 200 mph. I split-essed on him, and was going around 500 mph. Flak started coming up very thick and accurate. I fired a single short burst from around 400 yards, and got hits on his wings. I had to break straight up, and looking back saw the enemy aircraft crash-land about 400 yards short of the field. A wing flew off outside the right jet unit. The plane did not burn."

This was Yeager's only encounter with an Me-262. By war's end he'd posted eleven and one-half victories, most of them over Bf-109s.



"Aviator Changed How the World Would Fly"

By N'dea Yancey-Bragg, *USA Today*, Dec. 9, 2020.
Contributing: Steve Kiggins, *USA Today*; AP.

"The aviation world is mourning the death of Chuck Yeager, a decorated U. S. Air Force test pilot who became the first person to fly faster than the speed of sound in 1947.

Yeager, 97, was remembered as 'America's greatest pilot' in a tweet attributed to his wife, Victoria Scott D'Angelo.

He was 'the most righteous of all those with the right stuff,' said Maj. Gen. Curtis Bedke, commander of the Air Force Flight Center at Edwards Air Force Base in California.

Although he is most famous for earning the title 'The Fastest Man Alive,' Yeager continued to break records and returned to combat after breaking the sound barrier.

Still, Yeager never sought the spotlight, and, in 2011, told NPR that he was just 'at the right place at the right time.'

'You don't do it to get your damn picture on the front page of the newspaper,' he told NPR, 'you do it because it's your duty. It's your job.'

Here's a look at his remarkable career.

Yeager rose through the ranks as a World War II pilot.

Born in West Virginia in 1923, Yeager joined the Air Force at 18, where he rose to fame as a fighter pilot in World War II. He was credited with shooting down at least a dozen enemy aircraft – including more than four planes twice in one day: Oct 12 and Nov. 27, 1944, according to CNN editorial research.



Here's Chuck Yeager (middle) with his ground crew and his P-51 Mustang during WWII. It was named after his first wife Glennis.

He was shot down on his eighth combat mission in March, 1944, but was able to evade capture with the help of the French resistance, rejoin his unit in England, and eventually return to combat.

After WWII, Yeager became a test pilot who brokered numerous records for speed and altitude.

Yeager broke the sound barrier at age 24.

Yeager broke the sound barrier while flying over California's Mojave Desert in 1947. His X-1 aircraft was lifted to 25,000 feet and then released through the bomb-bay of a B-29. The X-1 soared to 40,000 feet and exceeded 662 mph, the speed of sound at that altitude.

Yeager's feat was kept top secret for about a year – when the world thought the British had broken



A painting of the Bell X-1 rocket plane after being dropped from the B-29.

the sound barrier first. His celebrity status rose further when the story of his most celebrated accomplishment was captured in Tom Wolfe's best-selling 1979 book 'The Right Stuff,' and he was portrayed by Sam Shepard in the 1983 movie it inspired.



Chuck Yeager (front) with Sam Shepard, the actor who portrayed him in the movie "The Right Stuff" – next to the Bell X-1.

President Harry S. Truman awarded Yeager the Collier Air Trophy in December, 1948 for his breaking the sound barrier. In 2012, on the 65th anniversary and at age 89, Yeager did it again as a passenger in an F-15 at Nellis AFB near Las Vegas.

Yeager continued to set records and returned to combat.

Among the flights he made after breaking the sound barrier was one on Dec. 12, 1953, when he flew an X-1A rocket plane to a record of more than 1,600 mph.

Yeager also returned to fly combat missions in the Korean and Vietnam wars. He retired from the

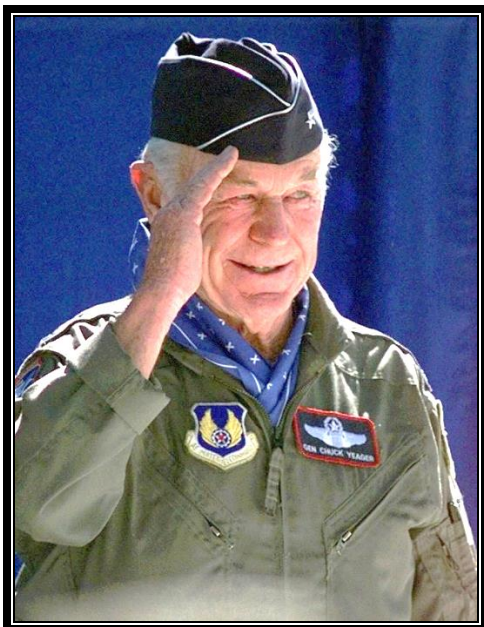
military in 1975, having flown 10,131.6 hours in some 361 different types and models of military aircraft during his career.

Yeager was also awarded the Silver Star, the Distinguished Flying Cross, the Bronze Star, the Air Medal and the Purple Heart. He received the Presidential Medal of Freedom in 1985.

Yeager continued working after his retirement from the military as a consultant to the Air Force and to Northrop Grumman Corporation.



Gen. Chuck Yeager at the age of 89, ready to fly in an F-15 past the speed of sound again.



**Charles Elwood "Chuck" Yeager
February 13, 1923 – December 7, 2020
We salute you, Chuck Yeager, and will always
remember you had "The Right Stuff"**

Blue Angels Transitioning to Super Hornet in 2021



**U.S. Navy Photos
The Blue Angels in their last flight in the F/A-18
Hornet aircraft.**

Today we conducted our final flight on the F/A-18 A/B/C/D "Legacy" Hornets - marking the official transition of the Blue Angels to the F/A-18 E/F Super Hornet platform.

"We are incredibly honored to have the opportunity to salute those teams who have flown, maintained and supported this platform for over three decades of service," said Cmdr. Brian Kesselring, U.S. Navy Blue Angels commanding officer and flight leader.

"We deeply appreciate the expertise and operational knowledge Blue Angels past and present have brought to the team."

The 2020 show season marked the end of the service life of the aircraft the team has flown for 34 years. The 2021 show season will be the Blue Angels' first year flying the Super Hornet platform as well as the 75th anniversary of the team.

[#BlueAngels](#) [#USNavy](#) [#USMC](#)



All the planes the Blue Angels have flown



FLIGHT LINE

Volume IV Number 7

September 12, 1984

The Official Publication of the Southern California Wing of the C.A.F.
Col. Harvey Victor
Public Affairs Officer

Col. Pat Brown
Editor

Before Chuck Yeager turned 22, he showed the world what he was made of by shooting down thirteen enemy planes in World War II.



Five in one day.

But it wasn't until after the war, when still only 24, that Yeager began to tackle an even more dangerous adversary: the untested limits of space.

He went on to become the first man to break the sound barrier, the first to travel at twice that speed (over 1600 mph) and one of the first pilots to reach the edge of space, taking a plane above one hundred thousand feet.

If there's ever been anyone who had "the Right Stuff", it's Chuck Yeager.

The Southern California Wing is proud to announce that BGen. Yeager will be our Guest of Honor at a special meeting 26 September.

This Banquet meeting will be held at the new Airtel Plaza Hotel. Cocktails from 1800 hours, Banquet begins at 1915 hours.

This memorable evening is for Wing members and their invited guests only. Tickets will be \$20.00 per person, all taxes and gratuities included. No-host bar at the cocktail function. Please wear your uniform as we all turn out to honor Chuck.

Experience Flying With *The Tinker Belle*

By Scott Williams – from www.monroenc.org

Editor's Note: *The Tinker Belle* is well known to us at CAF – SoCal Wing. We brought her to life many years ago, and she flew away to Midland after we revamped her and sent her on her way. We are so glad to see she has a new home, receiving TLC!



**First Officer Scott Williams with *The Tinker Belle*
At The Greatest Show on Turf, Geneseo, NY,
September 20, 2017**

In baseball, the knuckleball is referred to as "controlled chaos." Landing a 48,000 pound tail-wheel aircraft or "taildragger" nicknamed *The Tinker Belle* is sometimes in the same neighborhood as the knuckleball.

Eye height at touchdown on the main landing gear is almost in the stratosphere, and then the fun begins. I never knew that dancing was a part being a pilot until I flew the C-46. After the main landing gear touches, the throttles are brought to idle, the airspeed bleeds off, and the tail begins to settle. With decreasing wind flow over the rudder, greater deflections are required of the rudder to achieve control about the vertical axis.

I can hear the Jackson 5 singing "Dancing Machine" in my head as my feet dance upon the rudder pedals trying for that magical thing called directional control. Fred Astaire would be hard pressed to keep up with the gyrations of a pilot's feet on the rudder pedals of the Commando during landing. The tail wheel settles to the runway during landing roll out with the tail wheel locked and upon touchdown the landing can quickly turn into a knuckleball, as the way the

tailwheel is headed is the way *The Tinker Belle* or "Tink" wants to go.

Rudder pedals, in addition to using differential brakes and thrust to control the direction of this monster are your tools for directional control of the C-46, and you might need them ALL depending on the conditions.

I was first introduced to the C-46 via a non-profit called Warriors & Warbirds (W&W), the organization that operates *The Tinker Belle*, based at the Charlotte Monroe Executive Airport in Monroe, North Carolina. The aircraft is owned by the lovely city of Monroe, a place that offers many business opportunities for those delving into entrepreneurial enterprises or simply those that want a nice place to raise a family. Monroe has a lot to offer and I am thankful that The City of Monroe and Warriors & Warbirds gave me the opportunity to fly this piece of living history.

In the lower 48 states, *The Tinker Belle* is the only C-46 Commando dwelling about in the skies, working the airshow circuit. She serves as an ambassador, promoting the City of Monroe, North Carolina and as a living history lesson for all the thousands of folks that have and will tour her.

Ground School for me began with W&W C-46 Pilot, Tom Mulcrone. Tom flew the C-46 for Zantop Airlines in the 1960's before beginning a career with Delta Air Lines, eventually retiring as an L-1011 Captain. Known as "The Professor" for his encyclopedic knowledge of all things C-46, it was a true pleasure to learn from the man with an equivalent of a PhD on the Curtiss Wright product known as the Commando.

As all at W&W are volunteers, I paid my dues working on the ground before actual flight training began - and wore many hats at my first airshow, Warbirds Over Monroe in 2016. Sanitation engineer, caterer, aircraft washer, ramp worker, directing the start and taxi of Tinker Belle - are many but not all of the titles at that airshow that I took on. To me it was all fun, just to be a part of the show in support of the C-46.

The day finally arrived for my Second-in-Command qualification flight in the right seat of "Tink" with W&W's Chief Pilot, Captain Alex Mello. Captain Mello's flying skills include multiple decades as an airline pilot currently flying the A320 Airbus for a major airline based in Charlotte, and hundreds of hours flying the C-46. But before you spread your wings and break the surly bonds, preflight inspection is a must.



The venerable C-46 *The Tinker Belle*, ready for take off.

Due to the sheer size of the Commando, preflight inspection takes a while. The wing span is 108.6 feet and the cockpit seat height on the ground with the tail down is roughly the same as that of a Douglas DC-10 wide body jet. Oil capacity is checked via use of a 15-foot ladder, and if oil is needed it is delivered in gallons instead of quarts.

The fuel tank quantity is checked via use of the same logic that President Reagan used in dealing with the then Soviet Union: "trust (the fuel gauges) but verify." Verifying is done by climbing on to the wings through emergency exits from the cabin and actually "sticking the tanks" with a measuring stick to verify fuel quantity in each of the 6 fuel tanks.

The remainder of the exterior preflight is similar to most other aircraft in that you are checking general condition of the aircraft controls and structure. Hydraulics are checked in the reservoir itself which is located inside the cabin, just aft of the cockpit, aircraft left. Checklists are used for all cockpit procedures just as in any professionally-run flight operation, and finally the time comes to bring the two Pratt & Whitney 2,000 horse power engines to life.

Unlike turning one start switch on the Boeing 737 that I fly for a major airline based in Houston, starting the R-2800 engines of the C-46 requires teamwork between the right and left seat occupants in the cockpit. In starting the left engine, Captain Mello actuates the starter switch and I turn

on the magnetos, move the mixture to auto rich, and manipulate the left throttle to coax the engine to start. Roles are reversed in starting the right engine, as I engage the start switch and the Captain moves the left mixture, magneto switch, and throttle.

Runway 23 waited patiently as we taxied out at KEQY, the Charlotte Monroe Executive Airport - as did great visibility and light winds, a combination that suits this big tail dragger and fledgling First Officer just fine. All checklists have been completed and we line up on Runway 23 and lock the tail wheel in place. Brakes held, control wheel or "yoke" aft, the engines are pushed up to 30 inches of manifold pressure and the brakes are released, after ensuring engine parameters are nominal. Both throttles are then pushed up to 52 inches of window-rattling manifold pressure, and within mere seconds, the tail wheel is aloft, nose lowering to almost level attitude as we accelerate towards takeoff speed.

"V one;" "V two;" "positive rate" (of climb);" "landing gear up." Airborne now, the runway falls below and behind as we accelerate to 125 knots (144 miles per hour) with the cowl flaps open to cool 36 cylinders that are working very hard to earn their keep. Power reductions for climb and cruise follow suit shortly thereafter and we are trimmed up for stabilized straight and level flight.



How beautiful is this – *The Tinker Belle* in flight

Ponderous and slow would be an adequate description of the maneuverability in pitch and roll rates, but you must remember this - unlike another Curtiss Wright product, the P-40 Warhawk fighter plane, the C-46 is a freighter and not designed to turn like that of an agile fighter aircraft.

In all phases of flight, the use of the huge elevator trim wheel at my left hand is not an option but a necessity, unless you want a cardio workout the entire flight. Elevator, rudder, and ailerons are all cable and pulley affairs just like a Cessna 150. The horizontal stabilizer of the C-46, at 36 feet 4.4 inches, is greater than the wingspan of a Cessna 150, and the C-46 wingspan is 108.6 feet! Earlier models of the Commando offered hydraulic aileron boost, but this is not offered in *The Tinker Belle*, which is an F Model C-46. Cruise speed is about that of a Cessna 310, in the 160 to 180 knot (184-207 mph) range, and engine out performance in positive vertical rate of climb equates to similar light twin engine aircraft. Roll and pitch rates are slow, but again, the C-46 was designed to haul a lot of cargo in and out of sometimes unimproved airstrips, not try and turn on a dime in air combat maneuvering like a fighter.

The Commando became a legend and earned its place in history flying the "Hump," the nickname for the Himalayan Mountains in the CBI (China, Burma, India Theatre) during World War II. Commandos hauled anything that would fit into the cavernous cabin - which included jeeps, up to 40 combat troops, bombs, fuel, and anything else needed to support the Chinese/Allied effort during the war.

The Tinker Belle has cables in the cabin ceiling that run from front to rear. Many that tour her think these are simply hand-hold cables for balance, but they were actually used by paratroopers to connect their static lines. The static line plays out when the troopers jump from the door and opens the parachute of each jumper.

After delivering various cargos, the C-46 would return to base and repeat, as necessary, the hazardous journey across the treacherous Himalayas. Moving forward seventy-three years, I find myself leisurely cruising above the lush forests and farmland around Monroe, North Carolina, just getting the feel of flying *The Tinker Belle* during my right seat checkout.



WWII Weekend at the Reading, Pennsylvania Airshow - 2017

Reenactor Paratroopers (Author second from right.) *The Tinker Belle* in background

After delivering various cargos, the C-46 would return to base and repeat, as necessary, the hazardous journey across the treacherous Himalayas. Moving forward seventy-three years, I find myself leisurely cruising above the lush forests and farmland around Monroe, North Carolina, just getting the feel of flying *The Tinker Belle* during my right seat checkout.

With landing gear and flaps retracted, "*Tink*" handles like other transports that I have flown in my aviation career, very stable, as the R-2800s loaf along with that distinctive radial engine sound that makes the hair on your arms stand up. The cyclic firing of the circularly-arranged cylinders of the radial engines is literally a blast from the past - as most of us in modern times only hear the flavorless, common whine of turbine engines passing overhead.

Rolling left and right via use of the "yoke" in my hands offers a heavy feel, and the reaction time of the C-46's long wings is slightly delayed and slow. Returning to straight and level flight shows the stability of this huge "tail dragger," which is solid as a rock. Descending, as in any aircraft, requires planning for many reasons. As "*Tink*" is unpressurized, the descent rate must be kept low so as not to hurt the ears of passengers and crew.

Any big reciprocating engine needs tender loving care so that it is maintained in the proper temperature range. Thus, when power is reduced

for descent it is reduced slowly. Captain Mello and I are both airline professionals, and the use of checklists is no different when flying *The Tinker Belle* than in our respective Airbus and Boeing aircraft at work. Returning to the Charlotte Monroe Executive Airport, the R-2800s are reigned in as the power is reduced, slowing to adequate airspeed to lower the landing gear and flaps for landing. 25 inches of manifold pressure is set and varied slightly as needed with the landing gear all down and flaps extended to 35 degrees or fully for landing.



Full flaps – touch-down – *The Tinker Belle*

The descent rate on final approach with an airspeed of approximately 100 knots (115 mph) at these power settings and in this configuration (landing gear and flaps down) maintains an approximate 3-degree gradient to the runway. As the altimeter unwinds with our descent, the runway approaches, and as it nears I pull back slightly on the yoke as the main wheels make contact. Both throttles are brought to idle and if you recall the reference to “dancing” on the rudder pedals, this is where the music starts. Today the winds are light and my dancing shoes are not needed, but you never let your guard down when landing a taildragger until the aircraft is back in the hangar with the doors closed and locked.

Decelerating on landing roll out decreases the lift on the horizontal stabilizer and the tail begins to settle to the runway. The trick is to fly the tail to the runway and not simply let it drop like a rock, banging to the ground. The shock absorber will do

its job with the tail wheel but why subject such a lovely gal as *The Tinker Belle* to such unnecessary abuse? Thus, I apply slight forward pressure on the yoke as the airspeed bleeds off, which gently lowers the tailwheel to Mother Earth. At taxi speed the tailwheel is unlocked which allows the tail wheel to pivot.

To clear the runway after landing, we make a 90 degree right turn on to the taxiway using a touch of right brake, which applies the brake on the right main landing gear and then applying a pinch of power to the left engine. The thrust from the left engine in conjunction with the application of right brake, pivots the tail to the left and the nose of the aircraft to the right. To slow the momentum of the swinging fuselage or body of the C-46 before we reach the 90 degree point of the turn, a touch of left main wheel brake and a pinch of thrust from the right engine arrests the momentum of “*Tink*” perfectly at the 90 degree point of the taxi turn. Another 90 degree turn is made, and we taxi straight ahead to the ramp where *The Tinker Belle* will rest until called airborne again for the next show. After landing and parking checklists are completed, mixtures are brought back to the aft cut offs. The silence of the shutdown R-2800s is deafening.

Never in my wildest dreams did I think I would fly a C-46 Commando - but post flight I find myself shaking hands with Captain Alex Mello and thanking him for the opportunity. I owe a debt of gratitude to all the volunteers at Warriors & Warbirds as well as the fine City of Monroe, North Carolina for this rare chance to operate such a historic aircraft. If you would like to tour *The Tinker Belle*, see her on the airshow circuit, or volunteer with Warriors & Warbirds - please look us up on Facebook or at warriorsandwarbirds.com.



CATALINAS VISIT PEARL HARBOR®

David Legg, The Catalina Society (UK)

Some years in the planning, this summer saw a large-scale celebration to mark the 75th anniversary of VJ Day in Hawai'i. The aerial events, known as '*Legacy of Peace Aerial Parades*,' included a flypast of WWII aircraft types among which were two Catalinas from mainland USA...

Of course, on the '*Day of Infamy*,' December 7, 1941, when the Japanese attacked Pearl Harbor, more than thirty Catalinas from locally based patrol squadrons were lost on the ground. So, it was only fitting their loss and the subsequent Allied victory should be marked by two examples of the famous flying boat.

The two Catalinas that made the journey to Hawai'i and back were both originally built for the Royal Canadian Air Force (RCAF) as Canso As, more or less equivalent to the US Navy PBV-5A *Catalina*. **N9767 Princess of the Stars** originated on the Sea Island, Vancouver production line of Boeing Aircraft of Canada Ltd with the construction number (c/n) 21996.

She was delivered to the RCAF in March 1943 (serial # 9767), acknowledged in her present-day US civil registration. Her wartime operational service was spent with 162 (BR) Squadron, initially based at Yarmouth, Nova Scotia before moving on to Reykjavik, Iceland in January 1944.

Captained by Flight Officer Tom Cooke, she distinguished herself on April 17, 1944 when, during a meteorological flight, the crew spotted, attacked and sank the German U-boat U-342, south-west of Iceland.



Photo by Peter Houghton
Catalina N9767 "Princess of the Stars"

Struck off charge on April 1, 1946, 9767 was soon sold and subsequently flown in airline service in

Canada with Canadian Pacific Air Lines Ltd, Northland Airlines, Midwest Airlines and Ilford Riverton Airways before being converted to a firefighting waterbomber with Avalon Aviation in the mid-1970s. She stayed with Avalon through a number of corporate restructures, until sold in France in 1995.

Throughout her commercial career she was registered CF-CRR/C-FCRR and she continued to use this registration during the first part of her French ownership. She undertook two major trips, one to Africa for a French TV series and one to South America. Subsequently, C-FCRR appeared at a few airshows in Europe, during one of which, on Lough Erne in Ireland, she was damaged during a mooring mishap. By this time she had been re-registered N9767.

In March 2019, N9767 was sold to Stuart Barr of Eugene, Oregon and in the following June was ferried from France to the USA. The ferry flight took a '*roundabout*' route, originating at Melun Villaroche, Paris and then staging through Le Touquet, France; Inverness and Wick, Scotland; Reykjavik, Iceland; Narsarsuaq, Greenland; Goose Bay, Newfoundland and Labrador, Canada; Trois-Rivières, Province of Quebec, Canada; Willow Run, Michigan; Norman, Oklahoma; Raton, New Mexico; Fox Field and Sonoma Valley, California and finally, Eugene/Mahlon Sweet Airport, Oregon.

Since then, she's been used very regularly for airshow appearances and '*rides*' in the northwest '*States*.' In readiness for the Hawai'i trip, she was given a new overall gloss grey paint job with US Navy '*meatball*' insignia and the hull plane number 14-P-1, representing the Kaneohe, Hawai'i-based US Navy PBV-5 BuNo 2419.

The second Canso to make the trip to Hawai'i was **N222FT Flyin Turtle**. Another RCAF aircraft, she has had a slightly different history to N9767. Built by Canadian Vickers at Cartierville in Quebec as c/n CV-397, she was completed in May 1944 and given the serial 11074. Like N9767 she was also on the strength of 162 (BR) Squadron in Iceland during WWII.

After undergoing a freighter conversion in the summer of 1945, she had a long service life with various RCAF squadrons. After a period of storage, she was eventually struck off charge in November 1961, sold to Ontario Central Airlines and registered CF-OWE. She also flew with Northland Outdoors of Canada Ltd and, like CF-CRR, with Ilford-Riverton Airways. She then had several

Catalinas Visit Pearl Harbor, cont'd...

private owners in Canada and the USA and was variously registered C-FOWE, N691RF and N69RF.

In May 1986, she crossed the Atlantic to commemorate 75 years of US Naval Aviation; She rather disgraced herself upon arrival at Plymouth, in the United Kingdom when, after a botched landing, she waterlooped and sank. The substantial damage was repaired at the former Coastal Command flying boat station at nearby Mount Batten and she was soon back in action again.

In April 2000, she was sold to Wilson 'Connie' Edwards, a Texan who already owned a PBY-6A *Catalina* N4NC, another participant in the 1986 Atlantic crossing. Connie had his new acquisition re-registered N222FT and she was given a rather garish colour scheme and named *Flyin Turtle*. Following her owner's recent death, N222FT was sold to John O'Connor's firm PBY LLC of Wilmington, Delaware. The company's aim is to provide flight training from Kissimmee, Florida. Prior to the trip to Hawai'i, the 'Cat was given post-war US Navy insignia on the bow and most of the flamboyant *Flyin Turtle* scheme was removed.'

Returning to the Hawai'i trip: the first challenge was to get the two Catalinas and the other 'warbirds' there. Rather than flying them across the Pacific, this was accomplished using the US Navy *Wasp*-class Landing Helicopter Dock (LHD) USS *Essex* (LHD-2). Launched in February 1991 and commissioned in October 1992, USS *Essex* was built in Pascagoula, Mississippi. Her massive carrier decks allowed ample space for the parking of the selection of 'warbirds.'

In July, 2019, both Catalinas were flown to San Diego, California, where they subsequently alighted on the water close to where the USS *Essex* was docked. On July 26, N9767 flew down from her home at Eugene Airport (KEUG) in Lane County, Oregon direct to NAS North Island, San Diego. The crew for the 8.5-hour flight consisted of pilots Peter Houghton and Fred Owen, Coy Pfaff and Melissa Hyerstay. N222FT had been given an extensive annual check and refurbishment in the capable hands of Chad Ezell at his Ezell Aviation facility in Breckenbridge, Texas. N222FT flew from Breckenbridge to San Diego.

The flight crew of N222FT consisted of Jayson Owen, son of N9767's Fred Owen, and Bill Clarke with owner John O'Connor on board for initial flight training along

the way. They made an intermediate stop at Doña Ana County International Jetport, Santa Teresa, New Mexico en route to San Diego.

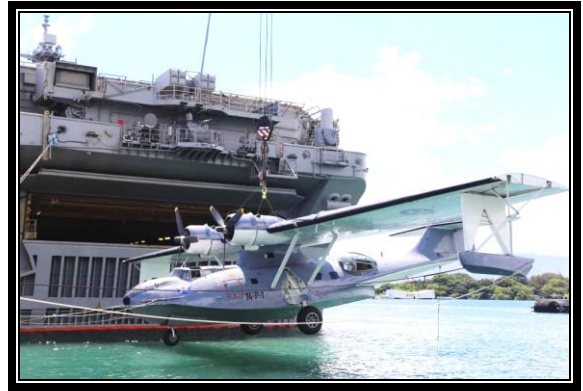


Photo by Tim "Shandog" Shanley
N9767 *Princess of the Stars* is carefully hoisted from the water onto the USS Essex.

On July 29, after arriving at North Island, both Catalinas were flown onto the water at San Diego. In a very carefully planned and orchestrated crane operation, they were hoisted onto the dockside and then onto the decks of the 'Essex.' This was an object lesson in how to crane-lift a Catalina, using the correct lifting points in the wing centre-section and in stark contrast to some other attempts in the past, involving other Catalinas that have resulted in terminal damage to the airframe. On August 12, the reverse operation was carried out in Hawai'i. The lifting operation was carried out by the contractor Naval Facilities Engineering Command (NAVFAC).

Peter Houghton, one of N9767's pilots, picks up the story: 'Most of our operations were conducted out of Honolulu Airport, as Kaneohe Bay is an active military base. Our water ops were carried out from the bay itself. We did a lot of flying whilst over there - *Flyin Turtle* did less as, in between arriving in Hawai'i and the main events, her crew had to return to Texas.



Another view of the carefully executed lifting operation.

Catalinas Visit Pearl Harbor, cont'd...

The main flyover was held on September 2 and it started from Wheeler Army Airfield, O'ahu and routed over Ford Island, the USS *Missouri* and the USS *Arizona* Memorial site. It was disappointing that we couldn't fly veterans in the Catalina because of COVID-19 restrictions.

But we still got to recreate some amazing flights, including landing and taking off in Pearl Harbor. We also spent a day on the water with US Navy Explosive Ordnance Disposal (EOD) technicians and divers trying to locate one of the PBYS that was sunk in Pearl Harbor during the December 7, 1941 attack by the Japanese. It was a terrific experience getting to re-introduce a PBY to environments it hasn't seen in decades and to ignite that passion in a new group of people. We never had a single complaint of noise or low flying in 30-hours of operations during the visit.'

Flyin Turtle's John O'Connor added: 'We had a great time in Hawai'i. Our entire crew was so proud to be able to participate in this significant event commemorating a turning point in the free world. The Catalina needed a team to maintain and work with the passengers we flew and credit goes to our captains Bill Clark and Jayson Owen. They gave me some initial flight training on the trip and I loved every minute.

The PBY takes me back to the days when I started driving my father's '60 Fleetwood Cadillac and he told me that when you start to turn it, it won't respond for about half a second. The PBY's the same!'

'The rest of our crew consisted of Doug Parti, mechanic and student PBY pilot; Jimmy Click, passenger manager and John Musgrave, 'puke bag manager' and future PBY pilot. In addition, there was a great team effort to get N222FT ready for the trip and the guys at Ezell Aviation worked long hours to get the aircraft ready at short notice. Particular thanks go to 'Zippy' for the loan of a carburetor, without which we would not have made it, and to M/Sgt Brandon Baimbridge and Sgt Aron Brewster of Hickam Air Joint Services Air Base for their professional and welcoming attitude.

We had many flight operations and memorable experiences with passengers and veterans and it was a truly memorable week spent with the two PBYS. At one point we had a great flight with the father and son team of Fred and Jayson Owen on board *Flyin*

Turtle. The 'Cat will return to Breckenbridge where Chad Ezell will carry out some more work on her - including a partial repaint that will feature a smaller *Flyin Turtle* emblem than before, to respect her previous owner, the truly colourful and great man, 'Connie' Edwards.'

This article is dedicated to Catalina pilot Ted Owen who passed away not long after the Hawai'i trip. The author would like to thank Peter Houghton (N9767) and John O'Connor (N222FT) for providing their personal memories of this amazing trip.

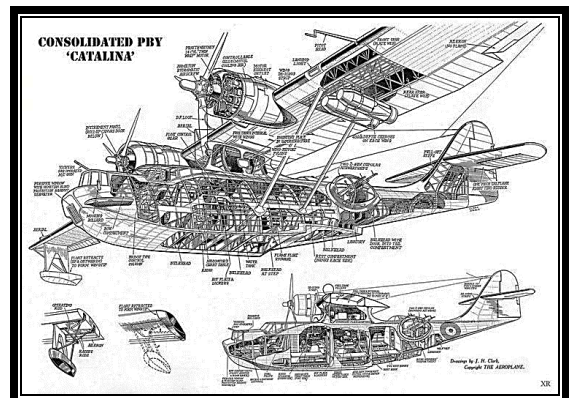


Photo by Doug Parti

***Flyin Turtle* N222FT in formation with a GM TBM Avenger and N9767 *Princess of the Stars* during one of the commemorative flypasts in Hawai'i**

The original version of this article appeared in the Autumn/Winter edition of *The Catalina News*, the twice-yearly journal of The Catalina Society which supports the operation of the airworthy Catalina *Miss Pick Up* based at the Imperial War Museum airfield, Duxford, Cambridgeshire, UK - see www.catalina.org.uk

Copyright: David Legg Nov., 2020.



Blow-up drawing of Consolidated PBY Catalina

"A More Super Super Hornet"

By Mark Phelps / *Air & Space – Smithsonian*,
January, 2021

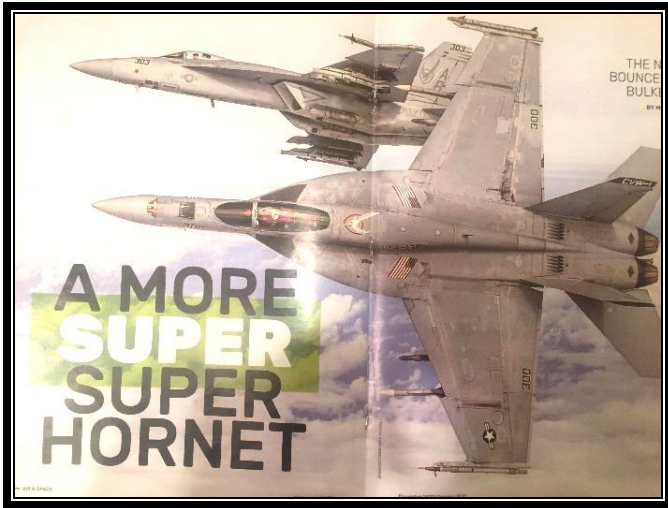


Photo: USN/ Lt Cmdr Darin Russell

These already potent F/A-18 Super Hornets returning to NAS Lemoore after a 2019 mission, are about to get an upgrade. A new radar; new fuel tanks; and a new computer will give the Hornets more ability to "sting."



Photo: USN/ Lt Cmdr Tam Pham

F/A-18 Hornets, like these over the *USS Ronald Reagan* in 2007, were retired from Navy service last year, but some "C" models continue to fly with the Marines and Navy Reserve.

In 2009, a "stack" of F/A-18s, including an "aggressor" (top) flew over Southern Louisiana for a photo shoot. The Hornet is the Navy's do-it-all mainstay fighter, attacker, electronic warrior, refueler and "mock MiG." (next column)



Photo: USN / Mass Comm. Spec. John P. Curtis



Photo: USN / Mass Comm. Spec. Chris Cavagnaro

Post-flight maintenance on an F/A-18E aboard the *USS George Washington*. With upgrades, the Super Hornets will stay on carrier decks through the 2030s.



Photo: USN / Mass Comm. Spec. Cody Hendrix
New Blue Angel Super Hornets at Pensacola NAS.



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WASP Training Base for Women Pilots, WWII

Dear Friends,

We're still in lockdown at the CAF So Cal Wing Museum. A few people are working on the airplanes doing maintenance and keeping them as up to date as possible. We wish you could visit, but hopefully in the not too distant future we'll have visitors at the Museum and our hosted events.

In the meantime, for some news and great photos, take a look at the CAF Headquarters website <https://commemorativeairforce.org/news> and the SoCal Wing Facebook page <https://www.facebook.com/officialcafsocal>

I've sent renewal notices to many of you and received some replies. Many thanks! Due to conditions beyond my control, I don't know if all of you due to renew in the past 10 months have actually renewed! I'll continue to send a separate email to you if you're due for renewal. If you haven't received your thank you letter and ID card, PLEASE LET ME KNOW. Send renewals to my attention at the So Cal Wing address, otherwise they might get lost!

We wish all of you good health and prosperity in these trying times. Stay safe and be happy!!

Ceci Stratford
CAF So Cal Wing
Friends of the Museum
(805) 630-3696 cafsocalfriends@sbcglobal.net

Photo Remembrance of WASP Women Airforce Service Pilots

Women from all over the U.S. volunteered to take the place of male pilots who were needed for combat roles in WWII. The WASP pilots flew tow-targets, did tracking missions, ferried planes from factories to bases, tested aircraft, and trained pilots. Their initial training was at Avenger Field in Sweetwater, Texas. The program lasted from 1942 to 1944. Our country owes a deep debt of gratitude to these gallant gals who stepped up and did our country proud as Women Airforce Service Pilots.



**318th & 319th Divisions of WASP parading before
Air Force brass at Avenger Field in 1943**



The WASP logo



A WASP hangar at Avenger Field, Sweetwater, TX



Prepping for a flight in an AT-6 Texan



WASP pilots planning a cross-country flight in a PT-19 training plane.



**A WASP pilot taking a PT-19A on a training flight.
The WASPs also flew AT-6s and Stearman biplanes
during training.**



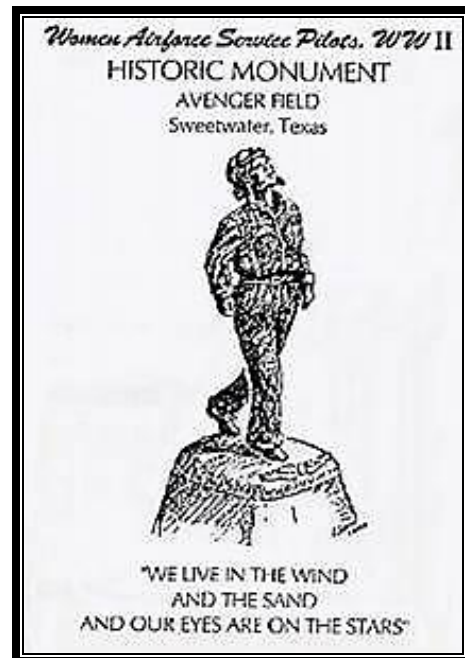
A bevy of beauties – WASP pilots enjoying some earned time off from their tough training schedule.



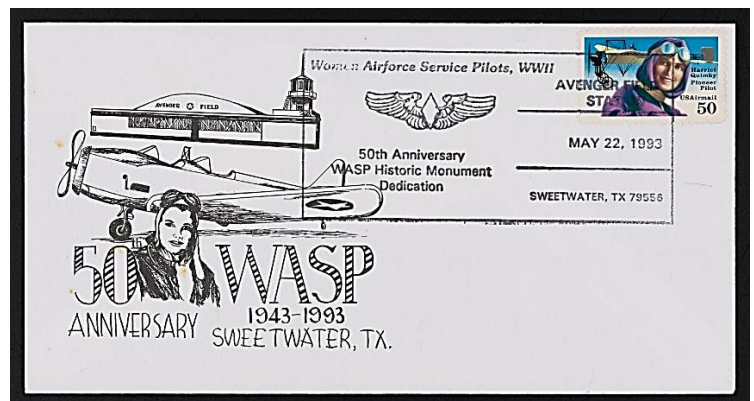
Speaking of a tough training schedule – here's A WASP pilot taking some R & R.



Here are photos in a WASP album of some of the many women who trained at Avenger Field. They represent the very best of American women.



A monument to the brave WASP pilots who gave of their time and expertise during our country's time of need in WWII.



A replica of a card sent to the "Sweetwater Alumnae" to invite them to a 50th anniversary celebration.



**A plaque on Avenger Field. It reads:
"March 11, 1943
TO THE BEST WOMEN PILOTS IN THE WORLD
General H. H. "Hap" Arnold**



**She's remembering how it was to fly the PT-19A
"back in the day."**



**An alumna of WASP next to one of the planes she
trained in at Sweetwater in WWII.**



**The front page of *The Avenger*, the newsletter of
the WASP contingent at Avenger Field. In the
next column is the poem "Dot PT-19A," included
on the front page.**

"Dot PT-19A"

By Mary Hart, *The Avenger*

Avenger Field, Sweetwater, TX, May 11, 1943

**A German spy renders to the Gestapo a report on
the PT-19A as observed at Avenger Field, base for
the training of Women Pilots, 318th and 319th
Divisions, U.S. Army Air Forces.**

"Dot PT-19A, ja, ja, I close it haff obserfed;
Und vot I do, Heil Hitler, see
Hass got me quite unnerfed.

It taxies neffer straight ahead;
Der ways of it are veerable.
Becoss der tailwheel dot it hass
Iss ver seldom steerable.

Dey take off opp unto der schy
In efery pose conceivable.
Der way der nose ge-points to Gott
Is simply unbelievable.

Der manner to offtspin dot schip
Iss bang der stick ge-howling.
Und nearly choin der power plant
Out underneath her cowlng.

Two flops it hass fitch hang behing
On each wing down so fonny.
Und if iss taxied in dot way
Instructor lose some money.

Der altimeter keeps der height
A secret military.
Tachometer at any speed
Does not a hairsbreadth vary.

In stalls, it shimmys und it shakes
Like someone mit der chills.
Und ven recovers from der same
Is pilot near outspills.

In landing all its lofely leaps
Der rabbit can't outdo.
Mein friends, it is an eagle crossed
Opp mit a kangaroo.

Ja wohl, der plague of Herrenwolk
Diss schip is efery vay.
So vell to train der maidenchens, ja
Dot PT-19A!"