Flight Line

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

COMMEMORATIVE AIR FORCE

February, 2021
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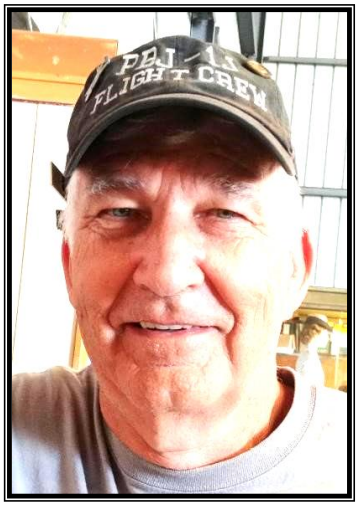

John Cutright - see page 9 for his story

Renew Your 2021 Membership – see form on page 3

Anne Constantin Birge and hubby Ray on board PBJ-1J "Semper Fi" for a memorable flight. Anne is our talented contributor of "Flight Line" articles.

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

Febuary 2021

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

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Submittal Deadline - 15th of the month

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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: _____

Street: _____ City: _____ State: ____ Zip: _____

Home Phone: _____ Work Phone: _____ Cell Phone: _____

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THE CAF IS A PATRIOTIC ORGANIZATION DEDICATED TO THE PRESERVATION OF THE WORLD'S GREAT COMBAT AIRCRAFT

CONTRIBUTIONS TO THE CAF ARE TAX DEDUCTIBLE

Bearcat Down in Burbank

It was a day like any other day, except I was there!

by Steve Barber

Photo by Frank Mormillo

Steve Barber ready for takeoff from Riverside

My apologizes to Walter Cronkite in the title, but this is a little story of what can happen – and how best to prepare for it if in fact it does occur.

Saturday, March 28th, 2009 – Jason Somes in the F6F Hellcat, Ken Gottschall in the A6M-3 Zero and I, your trusted story teller, in the F8F Bearcat – had just finished our final formation fly-by at the close of the Riverside, California Air Show and turned west for home, Camarillo, California.

Photo by Frank Mormillo

The Bearcat (bottom), Hellcat and Zero heading home for Camarillo Airport after the Riverside, CA Air Show.

Ken, being chosen as lead in the Zero, had dialed up So Ca Approach. We were assigned our squawk code, and requested a climb to 6500 feet. Our selected route of flight would take us northwest until over the 210 freeway, then almost due west, direct to Camarillo Airport. Our formation was somewhat spread-out in trail after our final pass, as we had all settled down and were selecting climb power, cowl flap positions, oil-cooler door positions, temps and pressures. Once these items were satisfactory, it was time to level out in cruise.

With Ken handling the radios and squawk codes, Jason and I were free to look around and enjoy the ride. We were cruising in loose formation with me in the Bearcat as #3 on the left and in trail of #2. A few minutes after our turn westbound, I felt that the engine was not "feeling" right. What do I mean by not "feeling right?" I can only tell you that I sensed a decrease in horsepower. I scanned all of the gauges and all readings appeared normal. Oil pressure, oil temperature, manifold pressure, R.P.M.'s. I was about to key my mike and ask my wingmen if they noticed anything.

Before I could do so, Ken called me to say, "Bearcat, you are really putting out black smoke!" My first thought was that the AMC on the carburetor had failed and gone full rich – which might explain the black smoke. I've had this happen on other round engines, and you can help it by manually leaning way back on the mixture control. I tried this and nothing changed, neither in the smoke volume, as verified by Ken and Jason, nor in a perceived increase in engine power by me.

We were coming up on the Rose Bowl at about this time, and Ken had called So Ca Approach to tell them one of our flight was having a problem and at the same time he had come close to me to check underneath to see if he could possibly tell me anything about what was happening to the Bearcat. As he was telling me what he was seeing (very heavy black smoke), my engine really started unwinding. Ken said it looked as if I went into reverse as he went way in front and under me. So Ca Approach wanted to know my intentions. I said, "Land at Burbank now!" They asked me "what runway do you want?" I replied, "what are the winds?" They came back that they were out of the south. I said "I'll take 15." They replied that I was cleared to land on any runway. Now all I had to do was make it.

Photo by Frank Mormillo
Steve is trying to fly the Bearcat to Burbank Airport to make an emergency landing.

I should add that while all this was going on, I had begun a shallow climb while the engine was still making some power. If I remember correctly, I got to just a little over 7,000' when the engine quit making any noticeable power, and down I came. So Ca Approach called to give me a squawk code – which I entered on my transponder as up to then I was on standby on the transponder as Ken was Lead and squawking for the flight. I remember at the time feeling irritated that I had to change my focus of making the airport to enter a code on the transponder. Funny how you remember things at this time of high stress.

When the engine began losing major power, the smell of hot oil permeated the cockpit, and I was ready to start hitting the fire bottles that Ken Kramer and crew had installed in the Bearcat – utilizing 3 separate Halon bottles. Engine fire is a big problem in the F8F due to the fact there is no real firewall, and the aileron control rods are directly behind the engine and would be the first to fail in event of a major fire.

Ken Gottschall then called to tell me that the engine was now putting out white smoke in large amounts. Shortly thereafter, the smell of hot oil was replaced by the smell of hot metal. Now I'm thinking, "Great, if I bend this airplane Ken Kramer, my brother Gary, Joe Peppito, and the rest of the Wing will kill me if I survive!"

Best rate of glide speed in the Bearcat is 140 knots clean – that is gear and flaps up. Now I'll tell you this, it is amazing how fast that Bearcat can descend with a slowly turning propeller, and the short wingspan of this aircraft. I was turning downwind for runway 15, and my altitude was about 3000'. I selected gear down, as I was afraid of the engine seizing and then having to do a manual extension of the gear with little time to do so. Boy, did this increase the rate of descent! Just as I passed the runway touchdown zone I turned base. "Still high," I thought, I selected 20 degrees flaps. What I noticed was how, with the gear down, flaps at 20 degrees, and the propeller barely turning, the trajectory was that of a "greased crow bar." As I remember it – the biggest problem I was having was maintaining 100 knots once the gear was extended.

While I was concentrating on arriving at the airport safely, Approach called me several times to contact the tower. Now folks, the last thing I was going to do was take my eyes off of my landing area, distract myself with any non-essential items, so I did not answer them. Again, going through my mind was, "Boy, I'll bet the tower or approach will be pissed at me!"

I had by this time cranked in full nose up trim and the stick was still nose heavy. In very quick order, I pulled back to round out the landing, the airplane arrived solidly on the runway in a three-point attitude. At the same instant the Bearcat touched down, the propeller seized. I turned off the mags, mixture to idle cut-off, master switch off – while I was rolling out on the runway. I knew they had closed the airport to other traffic for my landing, and my intent was to clear the runway if able to on the roll-out. As I made a right turn off of the active runway, a fire truck was entering right where I wanted to clear the active beyond the "hold short line." The fire truck saw there was no fire, guessed what I was trying to do, and put his truck in reverse. However, by this time I had begun braking, seeing him coming at me. Long story short – I didn't make it totally clear of the active runway.

I rechecked the switches, un-strapped, unplugged and jumped out. The fire trucks were checking the aircraft over and found no fire, and waited around for 20 minutes just to be sure.

A few more items I'd like to relate to the readers of this narrative: my wing-men did all the right things.

First, they alerted me to my aircraft smoking.

relieved me of most of the radio work. Third, they followed me down all the way to my touchdown in case I needed any help. And lastly, they landed after I was safely on the ground to check on me and the aircraft.

Things I could have done better: if you are flying formation, fly forward enough so that lead can just look out to see your position, and give you a heads up if he sees anything wrong. I was too far back at first trying to figure out if I had a problem. Secondly, as I was down to 1600 R.P.M.'s, I didn't try to pull the propeller back anymore than where I had it set. As this was an Aeroproducts propeller, oil was not necessary to govern R.P.M.'s – as long as the engine was still turning. Therefore, I might have picked up a little better glide ratio. Lastly, Jason tells me I didn't land on the center-line of the runway. Picky…picky!

Make sure your plane is fully serviced! I had 17.5 gallons of oil on departure from Riverside, and once the problem started up to the landing, all of the oil was gone! This occurred in a time of less than 7 minutes! Just imagine what could have happened if I had flown with minimum oil. Failure could have occurred much sooner – without the landing option I had. Oil pressure and temperatures were all in the normal range until the last 3 minutes.

Kudos to So Ca Approach for a very professional job. Ditto to the fire department at Burbank Airport and to all of the airport personnel for the friendly and professional way that they dealt with me. And lastly – to Millionaire Aviation, who assisted us with towing the aircraft to a safe parking area. Speaking of the tower (remember Approach telling me to contact them) – the airport manager asked that I call them as they wanted to talk to me. He gave me the number and as I dialed my phone I thought, "Here comes my ass chewing." When the tower chief answered he asked if I was the pilot, and I said "yes." He said, "Great job, sir! We're glad you are all right." Talk about class – my thanks to all for a wonderful assist.

Editor's Note: I can speak for the whole Wing when I say we all let out a huge sigh of relief to hear that Steve was down and safe in Burbank!

Secondly, they coordinated with Approach and

When I teach transition into high performance fighters (for that matter any aircraft) – I harp at the students: speed and altitude are your friends! You can be low to the airport environment, but you either need to have the runway made or be going at the "speed of stink." You can be slow, but you better be high if you need to translate that altitude to speed. Nothing gets me harping on pilots more than a long drawn-out final, with gear and flaps down. You have no chance if the worst happens. Speed is life, and in our high-performance aircraft, you can take that to the bank!

The F8F-2 down in Burbank at a hangar of a friend of CAF – ready to have its engine replaced.

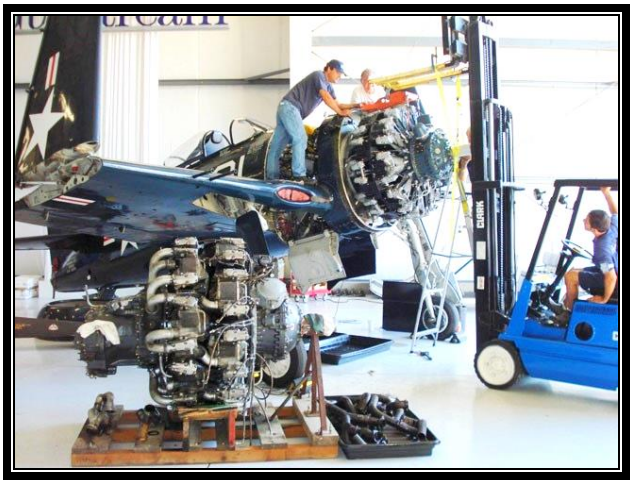
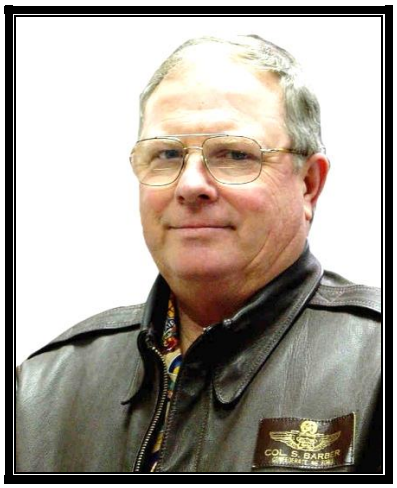


Photo by Ken Gottschall
Here's the new engine already installed on the Bearcat. Thanks to the hard work of Ken Kramer, Ken Gottschall, Mike Perrenoud, Gary Barber and other volunteers from our Camarillo location, the work at Burbank Airport is progressing.

Story reprinted (with photos added) from "Flight Line" of May, 2009.

Wing Leader's Report – October, 1993

By Steve Barber



Col. Steve Barber, Wing Leader

"You came on like a dream, peaches and cream.." Words to a song I loved when I was a teenager – and very applicable over the course of the last 45 days. But let us back up for a moment and look at what happened in that short time.

One and one-half years ago, we received a pile of aluminum and thousands of parts that flew in formation for just long enough to get itself to Camarillo Airport. We now have a beautiful F8F-2 Bearcat that every member, wherever they are, should be very proud of. Many of you worked very hard and gave money, time and blood to this project (some gave all of the above) and you should pat yourselves on the back for a job well done!

On Friday, October 1st, Lefty Gardner, after thorough preflight and many questions of our crew chiefs, strapped himself into N7825C and cranked her up. Many of us watched with nervous anticipation as Lefty did the run-up and, without further hesitation, took the active runway.

Power up to 30", check the gauges, and off he went! What an amazing thrill! A short time later, Lefty brought the F8F in for a landing just as if he had been flying this airplane every day for the past 1 ½ years! As Lefty taxied in, we could see the grin on his face. His grin was bigger than ours! Joe Peppito, greeting Lefty as he climbed down from the cockpit, asked what problems he had on the test flight? Lefty replied, "Joe, you and Ken are miracle workers – no squawks!" Now folks, we know that Joe and Ken are good mechanics, and not bad as people go – but "miracle workers???"

Well, ladies and gentlemen, we are lucky enough to have the best of the best.

Saturday, October 2 – it was time for the second test flight. Lefty needed to check the handling qualities, and we needed to get an eyeball on the gear doors at high speed, sooooo – Lefty requested a couple of high speed passes. If you were there, you know what an F8F sounds like under "power."

Very nice indeed!

Next, it was time for the four pilots who will be taking the airplane to airshows to get their first flight. Using the powers vested in me as "dictator," I went first. How did it feel? Please refer to the first line in this report! What an awesome airplane!!! Lefty says to me, "Now Steve, just relax, have fun." Relax? Yeah, right, Lefty. One thing Lefty said was I would not be up more than forty minutes, as he figured I would be worried about my first landing. He lost part A of his bet, as I had to stay up almost an hour to get my heart rate near normal, down from flutter mode. I got lucky on the landing, and the biggest problem I had for the next week was getting the grin off of my face.

Photo by Chris Luvara

Grumman F8F-2 Bearcat – N7825C

By the way – who gets the cleaning bill for my flight suit for pouring that large bucket of ice water over me after I landed?

Next up was Gary Barber. I'm sure he wasn't nervous at all? I am sure of this, however – his wife Nancy was much more nervous than he was!

I hope someone got her on video pacing around the blacktop! As Joe says, "No problem."

Bill Montague was then strapped in, and, after being briefed, away her went. Bill's experience in warbirds was evident in the nice takeoff and landings that he did. Well, we now have three out of four – with Mike O'Hearn to go.

Mike is such a "tall drink of water" there was some discussion of putting a ball turret on the F8F so his hear would clear. But we were able to squeeze him in and shut the canopy before he knew what was going on. Off he went – not nervous, confident in his ability, and it was determined later, bound and determined to take a short cut to the runway. Oops, I mean tail wheel lock! Oh, well. Mike did a great job and his wife Nona reported that it's a good thing he got to fly the Bearcat at Camarillo, as she had not been getting any sleep. Mike was keeping her up thinking about the F8F.

The next four days were spent fighting the weather and getting the flight time on the Bearcat in preparation for going to Midland. Using my supreme dictator's omnipotent rule - I chose myself to fly the "Bear" to Midland.

Thursday, October 7, 1993 at 0900, the F8F became airborne for its first cross-country flight in 1 ½ years. First stop, 1 hour and 45 minutes later, Falcon Field, AZ - home of the Arizona Wing. What a fantastic greeting they gave me! "China Doll" followed me in about an hour later, and the AZ Wing made us all a hot lunch, and helped in servicing both aircraft. They were fantastic!

Photo by Yoshi Abe
Grumman F8F-2 Bearcat on cross-country flight

Next stop for me was Santa Teresa, New Mexico, about 15 miles west of El Paso, Texas. As I was making my let down into the pattern, Bob Thompson, flying in "China Doll" called me to see if all was o.k. "Yes, all o.k." I answered. As I turned off the runway, Bob checked in one last time to make sure all was fine, and then said, "I'll see you in Midland." Gas topped, oil checked, a wave good-bye and off again. My ass was getting very sore by this time. It was good to see 285 knots on the GPS on my last leg of the flight. About one hour later, I landed in Midland. Bob Thompson, true to his word, had a beer in his hand for me. Warm as it was – none had tasted better!

Photo by Michael Prophet
C-46 "China Doll"

The four pilots had to fly for the FAA to get our final LOA (Letter of Authorization) for the F8F. It took us three full days to accomplish this.

Starting on Friday, after Gary flew for his LOA, we began to have hydraulic problems. I will not detail what went on between Friday morning and Sunday at 1300 because most of the text would not be fit to print. Suffice it to say that Saturday afternoon Doug Jeanes, Director of Maintenance at Midland, was wearing a badge that said: "Don't Yell at Me, Steve Barber Already Has!"

Lefty got up at the pilot briefing on Sunday morning and spoke of Lloyd Nolen – his efforts and dreams and of his favorite aircraft, the F8F Bearcat. He spoke highly of the Southern California Wing, and of the men and women who worked so hard to accomplish the restoration of the F8F in record time. There are some among us that have a hidden agenda, are in search of power, or worse. The point is: keep the dream alive, acquire, restore and, most of all, fly these aircraft and honor our heroes – past, present, and those to come – for our future generations.

Lefty saddled up at 1315 on Sunday in the F8F, and went on to do what he does best – fly a terrific

airshow routine. The announcer spoke highly of the Southern California Wing and of the two original founders of the CAF – Lloyd Nolen and Lefty Gardner. Lefty dedicated his act to his friend, Lloyd Nolen. It was very moving to me and to all those involved. Thank you so much, Lefty, and thank you Lloyd Nolen for everything. The spirit of the CAF is alive and well, and growing again – thanks to you all.

Lloyd Nolen (top) and Lefty Gardner

Gary flew the Bearcat home on Monday, the 11th of October, and had "no problems." "China Doll" went on to Houston for the airshow there, and is due home on the 18th.

Thank you, one and all, for all your hard work and efforts above and beyond! Keep 'em Flying!

Photo by Eric Van Gilder

"You came on like a dream….peaches and cream."

Thanks to Pat Brown for this article.

The 1967 Miracle at Quan Loi Army Base Camp – South Vietnam

By Anne Constantin Birge

Since the Wright Brothers conducted the *First Flight* on December 17, 1903, the development of aircraft and the technology needed to fly them, has grown by leaps and bounds. One thing that's never been solved with the heavier-than-air, gravity-bound aircraft, is that once they go up, they have an inherent need to return to *terra firma* - albeit in a controlled manner. But, some aircraft don't have controlled landings and they crash. This is a story that's taken 53-years to write. It's about a two-man US Army aircraft crew who survived the crash of their Grumman OV-1A *Mohawk* in South Vietnam in 1967 and 22-year old John Cutright, a US Army helicopter Flight Crew Chief.

The Incident at Quan Loi Army Base Camp Runway - During war, nothing is routine, as evidenced by what happened when John Cutright was only four months into his tour of duty, from December 1966 to December 1967, in South Vietnam. On April 4, 1967, 23-year old US Army Reserve SP-4 John Cutright, was assigned to 178th Assault Support Helicopter Company (ASHC) '*Boxcar*.' He was the Flight Crew Chief on a Bell UH-1C *Iroquois* helicopter (Serial Number / Tail Number 65-09564) from April 1, 1967 to May 20, 1967. Until 1962, *Iroquois* helicopters were designated as HU-1. Many people know the *Iroquois* by its nickname *Huey* and by its distinctive rotor sound. The *Huey's* pilot was preparing to land at Quan Loi Army Base Camp Airport, where John was stationed, when he and his crew were told an aircraft with engine trouble had priority to land.

When they heard the call, John was taking photos of the beautiful area around the base camp airport runway through the *Huey'* open left door. He saw the troubled US Army Grumman OV-1 *Mohawk* surveillance and attack aircraft as she was banking sharply into the trees, about 500' above the ground.

Using a 1960s *Canon Pellix* camera and *real* film, John took six photos of the *Mohawk's* final descent, the VERY low-level ejection of the pilot and

observer, the belly-up crash and the subsequent explosion and destruction of the aircraft.

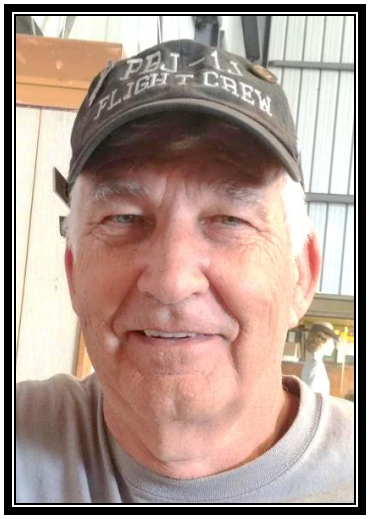
The *Huey* then quickly landed and the pilot, co-pilot and gunner exited before the rotors even stopped, so they could assist the *Mohawk's* 32-year old pilot and 26-year old observer.

John sitting with the Huey

Until the *Huey'* crew returned, John secured the blades and stood guard, until her crew returned. Aside from the *Mohawk's* pilot sustaining minor injuries, he and the observer walked to the Quan Loi Army Base airstrip. Before leaving the crash scene, John obtained one of the *Mohawk* crew member's deployed and left-behind parachutes, but was unable to get photos of them or their names.

Thankfully, the pilot and observer BOTH survived the accident. According to Lydia Fletcher, whose father, Stephen Fletcher, safely ejected from a *Mohawk* in August 1967, only about 18% of those who ejected from a *Mohawk*, survived and '*anyone who could eject and survive was pretty damned lucky in anyone's book*.'

Tragically, on July 27, 1968, the *Huey* SN 65-9564 (from which John photographed the crash of the *Mohawk*), was being flown by a crew assigned to the 118th AHC *Bandits*, the *Thunderbirds*, when she was hit by enemy gunfire, caught fire and crashed at QuảNg Trị, QuảNg Trị, Vietnam. All four men were Killed In Action.



John Cutright

John Cutright - At a time when the likelihood of being drafted into the military was very high, John decided he'd enlist before being drafted. So, on May 16, 1966, John joined the US Army and attended Basic Training at Ft. Knox, KY. He then attended Helicopter Mechanic Training at Ft. Eustis, Newport News, VA, and spent the next 29 months in *Army Aviation and Maintenance, Rotor and Fixed Wing.* During his time in Vietnam, he was assigned to only two helicopters - the *Huey* and a *Chinook*. From June 6 until November 30, 1967, when his tour of duty was complete, John was Flight Crew Chief of a Boeing CH-47A *Chinook* helicopter SN 64-13161.

> On August 30, 1969, after the *Chinook* SN 64-13161 was assigned to the 118th AHC *Geronimos*, her crew was operating in support of Australians in Biên Hòa, ĐồNg Nai, Vietnam when it crashed. All five men on board were killed, joining the 58,220 killed in the Vietnam War.

After he served his tour in Vietnam, John returned to Fort Bragg, NC and was awarded medals one always associates with the Vietnam War, the Vietnam Campaign Medal w/Device and the Air

Medal with 14 Oak Leaf Clusters. (From 1947 to 1968, an Air Medal was awarded for first 25-hours of combat assault flight time and an Oak Leaf cluster was awarded for each additional 25-hours.) While at Fort Bragg, John was loaned for six months to the *US Army Airborne, Electronic and Special Warfare Board* (USAAESWB), to crew a Huey for the testing of a "*People Sniffer' which was d*esigned to detect people under the North Vietnam forest canopy. The fact the assignment was almost always an 8 to 5 job, John loved it. And, he was so good at it, the Colonel who asked John to stay on, so he walked the transfer request through in one day and John was permanently assigned to the USAAESWB. Just 12 days before John was honorably discharged from the US Army (May 15, 1969), he and his wife welcomed the first of their two girls.

Returning to civilian life after three years of Army life, was not an easy transition. But, John's love of cameras and camera technology helped him get a slot in the year-long National Camera Repair School. From 1971 through 1985, John worked a variety of technical, sales, supervisory and regional managerial jobs for Honeywell Photographic, Pentax, Vivitar Corp, Rollei of America and Berkey Marketing Company. In 1986, John began his own business, where he refurbished and repaired cameras for Nikon Corp., called '*Camera Refurbishing Corporation*' until he retired at the end of 2007.

Like many retirees, John doesn't sit still. He and his wife travel a lot. Because of his love for South Vietnam and her people, John's returned at least 20 times. He also played National Senior Volleyball and is literally a lifetime motorcyclist, beginning when his mother was 7-months pregnant with him. Another passion, which he's never lost, is being around aircraft. Since 2010, John's been a permanent fixture at the Commemorative Air Force Southern California Wing in Camarillo, CA (CAF SoCal). He is a member of the Flight Crew on the North American Aviation PBJ-1J (B-25J-30-NC) *Mitchell* bomber named *Semper Fi* (SN 44-30988, BuNo 35857, N5865V).

Aside from a hangar-full of beautiful, fully-restored and airworthy WWII aircraft, waiting to take the next group of people on the flight of a lifetime, the SoCal Wing has a museum with numerous WWII artifacts.

John – showing parachute he donated

To add to their always expanding collection, John gave the Museum an artifact he brought home from the Vietnam War the silk, green, tan, white and orange US Army parachute from the site of the 1967 *Mohawk* crash. It's proudly displayed on the Museum's wall along with the series of six photographs which John agrees, accurately depict the horrors our military personnel, who served during the Vietnam War, faced daily - the crash of an aircraft.

The Grumman OV-1 *Mohawk* - The amazing OV-1 *Mohawk* entered production in October 1959 and the last delivery was in 1970. It *'was an armed military observation and attack aircraft, designed for battlefield surveillance and light strike capabilities…And was intended to operate from short, unimproved runways.'* It has two engines and holds two crew members, side-by-side. The 41' long *Mohawk* has a wingspan of 48' and has a maximum takeoff weight 18,109 pounds. They have a maximum speed of 305 mph, but cruise at 207 mph and can fly for 944 miles, with a 25,000' ceiling. According to the OV-1 *Mohawk* Association, '*For many of us, the term 'widow maker' applied to the OV-1. And there were certainly a lot of them that crashed. Of the 380 OV-1s that Grumman produced, 138 crashed that we know of (36%). Of the 73 A models produced, 37 crashed (42%).* An additional 65 were '*lost due to accidents, ground fire and one shot down by a North Vietnamese fighter.*' Today, of the different variants of the OV-1

around the world, there are approximately 16 located in the US, which are airworthy and about 25 more are on static display in the US and Argentina.

Grumman OV-1B Mohawk (SN 59-2631 - flyable)
US Military Air Power Museum in Jacksonville, FL

The OV-1 *Mohawk* Association website states that of the 380 *Mohawks* built, only 64 were OV-1As, like SN 63-13122, the one Marshall and Crowe crewed. Of those, only 21 were built in between 1959 and 1963, the same timeframe as Marshall and Crowe's *Mohawk*. Of those 21 OV-1A *Mohawks*:

John in front of his museum display

14	Crashed	13 *Mohawk* crew members were KIA in 6 of the crashes.
1	Destroyed	
4	Scrapped	All in Tucson, AZ
2	Display	Ropkey Armor Museum, Indianapolis, IN
		Military Aviator Preservation Society, Canton, OH

Discovery of the Crew's Identities - Over the years and to no avail, John and his friends tried to locate the names and fates of the *Mohawk's* crew. Then, on a beautiful Saturday afternoon on July 20, 2019, Ray, my husband, and I went for a flight aboard *Semper Fi*, with John as one of the Flight Crew. After the most memorable flight of a lifetime, John took us on a tour of the Museum, explained the story of the *Mohawk* and his years'-long attempts to discover the names and fates of her crew. With a bit of a background in genealogy and looking up aircraft, I told John, I'd do what I could to track down the *Mohawk's* Serial Number and her crew.

More than half a century passed since John photographed the event on 4 April 1967. But, three hours later, on our way home, I discovered the Grumman OV-1A *Mohawk's* serial number - SN 63-13122. Over the next two days, I discovered the probable story about the *Mohawk's* last moments, the names and pictures of her crew and their fate after the Vietnam War. Later, I talked with one of the crew member's sons about his Dad.

Captains Marshall and Crowe were assigned to the 1st Aviation Brigade - *The Warriors*, 12th Aviation Group, 222nd Combat Aviation Battalion, 73rd Aviation Company, in Vung Tau, Binh Long Province, South Vietnam. Based on Captain Crowe's obituary, it seems he was the *Mohawk's* observer and Captain Marshal was the pilot.

Major Evan Dee '*Joe*' Marshall - Pilot

Unable to contact any of Major Marshall's immediate family, this is what was available on the Internet: US Army Major Evan Dee '*Joe*' Marshall was born on May 17, 1935, in Centerville, KS. He enlisted in the US Army Reserve - twice. Once, on September 17, 1959 and the other on June 28, 1961. His release date was December 31, 1973. According to his military grave marker, Evan was in the Vietnam and Korean Wars.

In October 1958, Evan and Carol Lynn Dunlap (1937 to 2006) were married in Oklahoma City. They had two children. Their son, Dee Giffin Marshall (1960 to 2010) enlisted in the Army on October 12, 1978 and was released on September 2, 1982. Following in his father's footsteps, Dee re-enlisted in the Army from February 19, 1987 to April 1, 1992. He was married for about three years.

US Army Major Evan Dee Marshall died on 9 Dec 1979, at age 44. According to Evan's 3rd wife, he was flying in Mexico (San Luis Potosi) and flew into the side of a mountain. Evan, his son, his parents and his paternal grandparents are buried together at Pleasant View Cemetery in Blue Mound, KS, just 9.5 miles from his birthplace.

Captain Daniel Walston '*Dan'* Crowe - Observer

US Army Captain Daniel '*Dan'* Walston Crowe was born on July 1, 1940, in Visalia, CA. He attended the University of Santa Clara (CA) and University of California Hastings College of the Law, San Francisco, CA. He received his Army Officer commission through the ROTC program and enlisted in the US Army on November 23, 1965. While still in Vietnam, Dan was in another *Mohawk* incident. Dan and his pilot had been in combat and one engine was destroyed. The *Mohawk's* pilot was unconscious and Dan, with no pilot rating, miraculously landed the aircraft.

Before he was discharged from the Army on November 22, 1968, Dan attained the rank of Captain and was awarded the Bronze Star, Purple Heart, 11 Air Medals, the Vietnam Service Medal with two campaign stars, the Republic of Vietnam Campaign Medal, the Army Meritorious Unit Medal and the coveted Air Crewman's Wings. According to one of Dan's sons, his father brought his own parachute home with him. He said the parachute on the CAF SoCal Museum wall belongs to Major Evan Dee '*Joe'* Marshall.

After Dan's tour of duty in Vietnam, he taught at the Army Intelligence School, Fort Holabird, Baltimore, MD (1918 to 1973). It was here he met former high school history teacher and US Army Captain and Vietnam Veteran Nancy Berard when she worked at the Pentagon. In 1968, Dan followed in his father's footsteps and began practicing law in Visalia, CA with Crowe, Mitchell, Hurlbutt & Clevenger, until his retirement in 2004. In 1969, Nancy and Dan married and soon had three children who grew up to have children of their own.

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Nancy Berard Crowe

Dan wasn't all work and no play. He was a member of the American Radio Relay League, the Visalia Rotary Club, and many '*other business, professional and fraternal organizations.*' According to Dan's son, his father passed away on October 27, 2005 at age 65 and his mother passed away on April 28, 2014. Captain Daniel Walston Crowe and Captain Nancy Berard Crowe are buried together at the San Joaquin Valley National Cemetery, in Santa Nella, CA.

Thankfully, Major Marshall and Captain Crowe came home to their families and new careers. As brave aviators who defended our much-cherished freedoms, they deserve our sincere gratitude for their service and *for being there!*

Curtiss C-46 Commando – A 4-Engined Plane with 2 Engines

Flying The C-46…First Impression

By Jeff Ethell

(Note: Jeff Ethell came to Camarillo, CA in February, 1997 to fly the CAF So Cal Wing's Curtiss C-46 "China Doll." Immediately after the flight, he gave the following commentary.)

Photo by Eric Van Gilder
C-46 "China Doll" landing at CMA

The C-46 was a big surprise to me. After you fly the DC-3, B-25, and other aircraft considered to be "heavy twins," you appreciate that anyone who flew WWII airplanes probably had to be 18 years old and a weight lifter – because the airplanes are so heavy on the controls. It's not unusual for the B-17 or B-25 to have 100 pounds of control pressure to deal with. Particularly if you lose an engine, you end up wrestling the airplane to the limits of your strength. There's nothing to help you, other than muscle power and maybe differential engine power.

It probably wasn't so bad in WWII, because those guys were young and fresh out of Cadets. But to those of us who fly them now, they're heavy air-planes. Even though everyone told me that I'd enjoy how the C-46 felt, I was still surprised. From my perspective, it was immediately pleasant. The controls never got heavy. The whole time we were flying, even in slow flight and with one engine out, the airplane was very nice to handle. I was sur-prised at how light an airplane its size was on the controls.

The C-46 was a pre-WWII design, intended to be a pressurized high-altitude airliner. It never got there because WWII came along – and it never got its chance to do what it was designed for. But it was available for the massive transportation problem that came with WWII, when we had to move enormous amounts of material, and originally had no Transport Arm to speak of.

Airplanes were inducted into the military. The DC-3 was simply painted green, the seats taken out, and deemed ready to fly as the C-47. There were no self-sealing tanks, no armor plate, no help at all. WWII films taken over Arnheim and D-Day, show that when a C-47 was hit, it became a massive ball of flame. The plane went down immediately. There was no way out – everyone died. It's a terrible thing to watch.

The DC-4 became the C-54 the same way. In fact, United Airlines bought ten of them – but when Pearl Harbor happened, they were told "No Delivery." Again, they were painted green and off they went into the Army Air Forces.

Fortunately, the C-46 came along, and it had the power to out-perform even those airplanes with four engines. The C-54 out-performed the C-46 to some extent over The Hump (the flight route from India to China over the Himalayas), but Hump pilots told me the C-46 was THE airplane you could overload, climb to 20,000 feet (which was mandatory for the first time), go through terrible weather, get to the other side, off-load the equipment, and come back. The C-47 couldn't come anywhere close to that. Hump losses were high. We lost well over 700 airplanes, mostly due to the weather, while ferry-ing 650,000 tons of critical war supplies to forces in China. During the peak month of July, 1945, there was an average of 1.3 flights over the Hump every minute!

Having flown the C-46 now, I can see what those pilots were talking about. It's a four-engine airplane with two engines! It doesn't need the other two engines because it has two large R-2800s. Everything else had the smaller R-2000s, 1830s, or 1820s. The intention was to give the customer (it turned out to be the Army) a high-performance airplane that didn't over-tax the pilot, could be loaded to its limits, and would fly… even on one engine.

That was a revolution in the air-transport world. Quite frankly, WWII was a revolution all the way through. It probably advanced airline flying by ten years because the airline pilot who came out of WWII knew what carburetor icing was; understood the problems of having to go through very tough weather fronts, etc. The C-46 was probably the only airplane, until 1944, that could deal with these problems to some degree.

The C-46 comes off the ground like a shot. Of course, we were flying it light, but even so, it was off the ground quick and was immediately responsive. Differential engine power was wonderful. There's lots of power in the throttles. You have large engines out there and a move on the throttles gives an immediate response. You don't have that in airplanes of lower horsepower. I didn't fly the C-46 in a cross-wind, so I didn't experience some of the things that could get a pilot in trouble. But it was wonderful throughout the regime I flew.

This pre-WWII airplane was ahead of its day, and held its own throughout the war. Without it, there probably wouldn't have been the airlift operation we had, "Over The Hump" (from India to China) wouldn't have existed. It's certainly a great airplane, and a wonderful piece of history to keep flying. The CAF flies the only two C-46s that are displayed to the public ("China Doll" and "Tinker Belle"). Another 20 or so are still working in Alaska, Canada and Central America.

More About Flying the C-46

By John Deakin

(Note: John Deakin flew C-46s for Air America (CIA) in Southeast Asia. He's was also a 747 Captain for Japan Air Lines, and was one of the pilots for the CAF So Cal Wing's C-46 "China Doll").

The one thing the C-46 is really famous for is lousy directional control on the takeoff and landing roll. Its rudder is extremely ineffective at low speeds on the runway, even after the tail is up on takeoff. Even under ideal conditions, with the wind right down the runway, or with no wind at all, the airplane might suddenly, for no reason whatsoever, head for the side of the runway rather briskly. If you slam in full rudder to stop it, that rudder is totally ineffective. The only solution is to yank back the opposite throttle to stop the nose. And when the nose starts back, you have to get the throttle back up again to get the beast under control. That particular quirk has bitten more potential C-46 pilots than anything else.

The C-47 doesn't have the same problem. The rudder area on the C-46 is about 30 percent of the vertical surface area, leaving about 70 percent for the vertical stabilizer. The C-47 is reversed, giving it better directional control than the C-46 at low speeds.

Photo by Eric Van Gilder

Also, the C-46 is a very fat airplane – so when it's moving down the runway the fat fuselage blocks a lot of airflow over the vertical surfaces. The small rudder doesn't get much airflow, which limits its effectiveness. The C-47 has a much narrower fuselage, which allows more air to flow over the vertical surfaces, and it has a larger rudder to boot.

You can easily taxi a C-47 at moderate speed, 10 knots or so, and have rudder control with the free-swiveling tail wheel. The C-46 rudder has absolutely no noticeable effect when taxiing.

The C-46 has monstrous ailerons, consequently the adverse yaw effect is much greater than on other airplanes. The result is that if you roll the wheel to the left for a left bank, the nose actually goes to the right if you don't apply a fair amount of rudder to resist it. In most airplanes, on a cross-wind takeoff, you use the ailerons into the wind to help a little bit. With the C-46, it's absolutely crucial to use the ailerons very heavily to roll it into the wind.

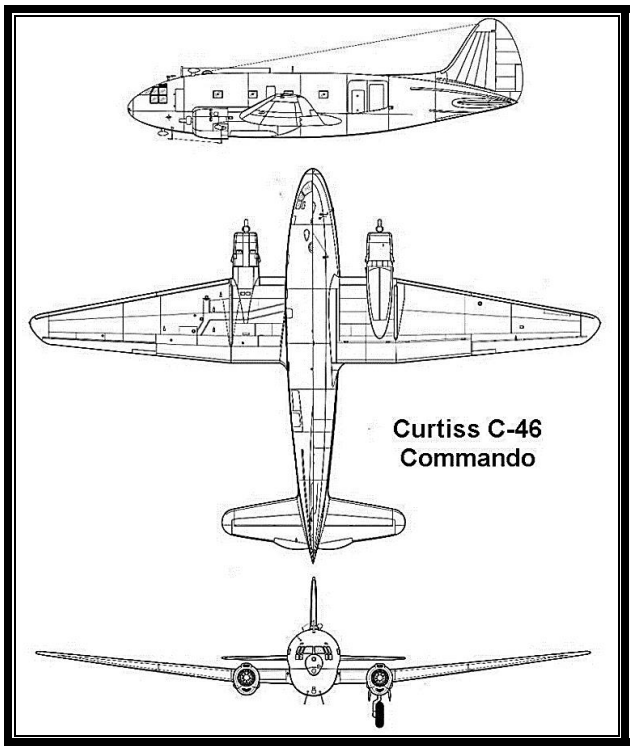
It's quite comical to watch when a jet pilot gets into the C-46 and doesn't instinctively use the rudder. They're not used to not using the rudder

at all, because most of the jet transports have dampers and other mechanisms that let you keep your feet on the floor when you're hand-flying them.

The airplane does a job that no other airplane can do, even today. A perfect example is the Everts operation out of Fairbanks, AK. They haul 12,000 – 15,000 lbs of gasoline and other liquid fuels in 55-gallon barrels into and out of 2500 foot gravel landing strips day after day – an astonishing feat. I'd love to try that for two weeks and really get sharp with the airplane again. Five C-46s fly for Everts, and they're restoring one or two more.

The C-46 has big, fat, soft, low-pressure tires, so it operates well off rough, soft, mud, or grass strips. It's footprint is fairly light for a huge airplane. At the time it was built it was the largest twin-engine airplane ever made. It's bigger than the B-17 and B-24 in all dimensions except that the B-24 has a 2-foot longer wingspan.

	Height	Wingspan	Length
C-46	21.7 Ft.	108.1 Ft.	76.3 Ft.
B-17	19.1	103.7	74.7
B-24	18.0	110.0	67.2



The rudder throw, i.e., the distance the rudder pedals move, is the greatest than on any airplane I've ever seen. It's quite difficult to set your seat so you can get full rudder on one pedal and get your other leg out of the way of the control yoke. There's a real trick to it.

I hesitate to say it performs well on one engine, because these days we're spoiled by jets and other high-performance airplanes, where the loss of one engine is a no-brainer…..it's just a little unbalanced thrust. You have better performance on one engine with any of the modern twins than on both engines with the C-46. Nevertheless, for its era, the C-46 had remarkably good performance on two engines, and pretty good performance on one engine.

It has enough rudder control to handle an engine out, but you have to get it all in there. You have to be aggressive with it. It's got sufficient power on the remaining engine to get around the pattern even with the max gross weight of 48,000 lbs on a fairly warm day.

The airplane can do a good three-point landing on short fields. Most people who fly large airplanes are stunned when they see the airspeed indicator sitting at 60-65 knots, and the plane hasn't stalled. You make a landing approach at 65 knots, fairly steep, in fact scary steep, and at the bottom, when you approach the runway, you yank the power off and haul the nose up and it squats down on three wheels, and you're so slow with so much flap out that it slows down very quickly. That's how you get it onto short, rough fields. There aren't many other airplanes that can do that.

In Vietnam, we'd go into short, miserable strips surrounded by unfriendly people who enjoyed shooting at airplanes. We'd make a very tight, Descending spiral, with a 45-degree bank, turn at 65-70 knots, and make a real tight final turn. Just as the wings rolled level, we'd touch it down at a full stall and slam on the brakes – and get it stopped before running off the far end of the

runway. Only the C-46 will do that with a huge load. The C-47 is good at this also, but can haul only half the weight the C-46 does. A tail-wheel airplane is definitely superior to a tricycle gear plane for getting into a short, unimproved strip, and the C-46 really excels at that.

In most airplanes, especially the larger ones, there's a considerable delay between moving a control in the cockpit and having something happen out on the wing, particularly with the throttles or props. With the C-46, you just pop a little throttle on it and you get instant power response. You wouldn't think the big prop would speed up that fast, or that the engine could respond so quickly. When the airplane suddenly veers into one of its wild excursions, you just pop a little power to it and you get instant response. The most effective directional control on the airplane is differential power. It'll get you out of trouble quicker than anything else.

I never flew the C-46 under icing conditions, but its reputation is excellent for fighting ice. It was used heavily on the DEW Line, where it flew in miserable Arctic conditions, and, of course, across The Hump, where its bad-weather exploits are legendary. I flew C-46s mostly in Southeast Asia, where the only ice was in our Scotch.

It has a good range with regular tanks, which hold 1,400 gallons. That will take it 10 hours easily, and if you really go into fuel conservation, you can get 12-13 hours flight time out of that much fuel. It will do 150 knots at low power settings and perhaps 125-135 gals/hr. If you really push it, it will go up to 180 knots, at maybe 180 gal/hr. Figure roughly 1 knot per gal per hour, which makes fuel planning fairly simple. At 150 knots, the range is 1,500 – 2,000 miles…..it depends on how slowly you fly and the load on board.

For a WWII-era aircraft of its size and type, the C-46 is pretty fast. Even though it looks fat, it's a streamlined airplane. It has a red-line speed of about 230 knots, whereas the "Gooney Bird" (C-47) is well below 200 knots. At airshows, it's impressive to dive down the last 500 feet at full power and go roaring along the runway at red-line speed! Everybody's impressed by how that big, fat, clumsy airplane can really move along!

The C-46 is a stiff-wing airplane. Most airplanes are designed with lots of flex in the wing – to absorb the turbulence. In theory, the wing on this airplane is built like a bridge, and is actually designed not to flex. Don Downie (former Hump pilot and co-author with Jeff Ethell of "Flying the Hump") said "Even in the most violent turbulence, it was impossible to see any flexing of this rigid wing structure. By comparison, the C-47 had a very flexible wing, designed to bend under loads. Many times, from the cockpit of the C-47, you could see the engine nacelle flex downward as the wing tip flexed upward, much to the consternation of those of us accustomed to the brick-house rigidity of the C-46."

The C-46 With Air America

By Ellis Meaker

(Note: Ellis Meaker flew C-46s for various commercial airlines in the 1950s, and for *Air America (CIA)* from 1965 to 1968. He also flew "China Doll" for many years, retiring recently with 2,650 hours of C-46 flight time.)

I had some *Air America* and commercial experience with this great workhorse. There were at least 50 non-scheds flying the C-46 in the late 40s-early-50s, carrying passengers and cargo throughout the states. Both *Flying Tiger Airlines* and *Slick Airways* freight lines began with surplus C-46s, and operated them even after more modern airplanes became available.

Photo by Dave Flood

One man could maintain the airplane. It required no more maintenance than the C-47, but could carry twice the load. I liked the big, friendly cockpit, where both pilots could reach everything, unlike a lot of WWII airplanes. There's never a

need to put both hands on the controls. Sometimes you might want to do that in a stiff cross-wind, when you're putting in max aileron, but normally you can handle everything one-handed.

One reason the airplane can land so slow is that the wing stalls from inboard to the tip. Most aircraft stall at the tip, and give a sharp roll from one side to the other, depending on which wing-tip stalls first. When the C-46 stalls, it will mush straight down from whatever attitude it's in.

The problem of having insufficient rudder at low speeds is aggravated by the old Hayes expander tube brakes. You can't hold these brakes at fast speeds because they fade exceedingly fast when they get hot, and then the airplane will whip one way or the other. When they made a transport category conversion out of it, they switched to disk brakes, which were a big improvement.

Photo by Michael Prophet

You can land most multi-engine airplanes with one wheel first in a cross-wind. But if you try that with the C-46, it's usually going to veer, and you don't know which way until it's happening! So it's better to just touch the wheels simultaneously, even in a strong cross-wind. The C-47 lands nicely on one wheel first.

One of my more memorable C-46 moments took place at 5:00 a.m. one morning in 1965 in Saigon, when check pilot Jim Russell and I were in the dark cockpit doing a pre-start checklist. There's a sound-proofing mat on the cockpit sides and overhead. When you test the engine-fire warning system, a red light comes on immediately, and a VERY LOUD bell rings. Suddenly, 6 or 7 rats came out of the sound-proofing mats and ran around squealing just a foot over our heads! When the bell stopped ringing, they disappeared! The check pilot watched me through the whole thing, and said, "Don't get excited unless the rats leave the ship!" Our plane carried a lot of rice, and the rats were living on board.

Following WWII, the Air Transport Association (ATA), set up regulations and requirements for future transport aircraft. Scheduled airlines wanted to seriously consider the C-46 in their expansion plans. It could carry 45-50 passengers, and was available for $20,000 - $25,000 apiece as surplus.

However, one of the requirements was a 250 ft/min rate of climb with gear up if an engine faile immediately after takeoff. The C-46 could barely meet that, and the C-47 could not. But since the airlines owned and had to keep operating their DC-3s (C-47s), they were exempted from this requirement for their remaining years of service. The C-46 was thoroughly tested and squeaked by. In the ATA's summary of their findings, they stated that the C-46 was beyond the capabilities of the average airline Captain! None of the major scheduled airlines ever used the C-46 to haul passengers.

Flying the C-46 in Alaska

By Merrill Wein

(Note: Merrill Wein flew C-46s for *Wein Alaska Airlines* in the '50s and '60s, and later for *Everts Air Fuel.* He currently flies "China Doll," and is an FAA C-46 check pilot.)

The C-46's fine handling and light control pressure on the elevator and rudder were developed after WWII. The original military airplanes were hydraulicly controlled and had lots of problems until the hydraulics were removed and spring tabs substituted. Hydraulic ailerons are still used on some aircraft.

The brakes are there to use when needed, but only after ailerons and differential power have proven insufficient. If used properly, the brakes will not be needed until a slow speed is reached on landing, and should not be needed on takeoff at all. But pilots used to flying modern aircraft are not used to using ailerons and differential power for directional control. Nose wheel steering does it all.

I flew C-46s for *Wein Alaska Airlines* in the '50s and '60s, flying cargo and construction materials for the

DEW Line and in support of North Slope oil exploration. The airplane performed well on small frozen lakes with one or two feet of soft snow. As we outgrew the DC-3, the C-46 was used as our primary passenger carrier.

The passenger airplanes were converted to transport category requirements, which included better engine cooling, a better firewall, and an engine fire warning and suppressant system. Power loss lights were installed to provide warning of engine power loss. A crude anti-skid system was installed, but on gravel runways and snow and ice it was better to turn it off because the release time was too long, using up too much runway. It worked better on paved runways.

I never really appreciated what the airplane was capable of doing until after my retirement, when I did some flying for *Everts Air Fuel* in Alaska, and operated into fields we used to go into with the smaller bush aircraft. Putting 14,000 lb loads onto 2,500 ft runways (sometimes shorter!) was common. It was physically demanding work. You had to load/unload your own cargo…manhandle a whole bunch of 55-gallon barrels up the incline, chain them down, then unchain them and roll them out when you got to your destination.

Photo by Michael Prophet
One of *Everts Air Fuel* C-46s in Alaska

The airplane handles better in three-point points with a load than it does empty. A light airplane becomes very unresponsive due to the low airspeed in the three-point attitude. The first time I retracted the flaps, I almost ran off the end of the runway. Leaving the flaps down on the landing rollout on short runways is essential to stopping, since the flaps provide a good deal of aerodynamic braking. It's truly a STOL airplane. It will be a long time before there's a replacement for the C-46 in Alaska. However, spare parts are in short supply.

The History of the CAF's Curtiss C-46 "China Doll"

By Ron Fleishman, So Cal Wing Historian

The history of the C-46F "China Doll" is typical of post-WWII surplus aircraft.

"China Doll" was one of 234 C-46Fs built at the Curtiss plant in Buffalo, NY. She rolled off the assembly line and was accepted in July, 1945, with Curtiss Construction No. 22486 and AAF serial No. 44-78663. Records indicate that early assignment included Sedalia Army Air Base (now Whiteman AFB, home of the B-2 bomber); Greenville, SC; Brookey, AL; and other bases in the southeastern United States. Used as a transport and glider tow plane, she flew with the military until the early '50s.

Surplused and sold to *Meteor Air Transport* of Teterboro, N.J., she was given the new number N53594, a new civilian paint scheme, and was put to work hauling finished clothing (from the garment district of N.Y. City) to Detroit and auto parts back to New Jersey (for distribution in the east). She was even used as a Christmas holiday transport, hauling toys and Santa sleighs. A radio remote was broadcast from the plane on one Christmas eve over New York City, according to Ken Johnson, chief pilot at *Meteor.*

Meteor went out of business in 1958, after which the plane changed hands many times….*Riddle, Zantop, Universal,* and several companies owned by *Ortner Air Service* of Wakeman, Ohio. The last civilian owner was *Plymouth Leasing* of Detroit, who leased the plane to *Rosenbaum Aviation,* who in turn cut holes in her sides, put spray booms on her wings, and used her as a pinecone beetle sprayer.

The CAF acquired the C-46 from *Plymouth Leasing* in February, 1978, along with the C-46 N78774. Both of the "old girls" were tired and needed lots of "TLC." N78774 got lucky early and went to the Oklahoma Wing, to become "The Tinker Belle." "Ol' 594" had to wait. She was finally assigned to the East Texas Wing, located at Conroe, TX, where she was given the name "Humpty Dumpty" in

honor of the C-46s that flew over the Himalaya Mountains from India to China (i.e., "The Hump") during WWII. She also received a Chinese color scheme and clever nose art – showing a Chinese egg jumping over mountain peaks.

An engine failed in 1980. This posed a bigger problem than the East Texas Wing folks wanted to handle, and the plane sat in non-flying condition until the summer of 1981. The newly-formed So. Cal. Wing wanted a plane, and they were offered the C-46 – if they could come up with two new engines and hang them on the plane. Who could refuse an offer like that?

It took the entire summer of 1981 to replace the engines. Then, on her first test flight, she skidded off the runway into axle-deep mud. With lots of coaxing, she finally left Conroe and flew to Airsho81 at Harlingen, TX, where two main oil lines let go.

"China Doll" being escorted on flight to Camarillo by the B-25 "Big Ole Brew" (eventually to be PBJ-J "Semper Fi")

During Airsho81, the C-46 was officially assigned to the So. Cal. Wing. On Columbus Day, 1981, she was flown to Van Nuys Airport in Los Angeles, and then to her permanent home at Camarillo Airport in the spring of 1982, where work began in earnest to make her a "star airshow airplane." This wasn't just a line fed to an ol' country girl. The California Colonels really meant it. Over the course of several years they cleaned up corrosion, patched up lots of sheet metal, overhauled the propellers replaced the passenger windows, and gave the plane a new coat of shiny aluminum paint and bright USAAF markings.

Still not satisfied, the So Cal Colonels gave her a new name and glamorous new nose art. I honor of the oriental flights of her sister ships, the name "China Doll" was chosen. Tony Starcer, the famed GI artist who painted the original "Memphis Belle" nose art, plus hundreds of others, applied the new name and art. It was to be Starcer's final nose art painting. When the plane was repainted in 1994, the nose art was re-painted by artist Patricia Sica.

"China Doll" attends dozens of airshows and military base displays each year. The Wing has been good to her, and, in turn, she has been good to the Wing. After all, "Treat her like a lady, and she'll act like a lady."

Photo by Dan Newcomb
"China Doll" heading to an airshow with CAF So Cal Wing's F6F-5 Hellcat and A6M3 Zero.

Curtiss C-46 "China Doll" outside CAF So Cal Wing's hangar at Camarillo Airport.

This article is from a previous "Flight Line" of circa 1983. "China Doll" has not flown for many years, but she still is a favorite of visitors to our Aviation Museum.

Alaskan C-46s Very Much "Alive"

From an article by Michael Prophet in *In Flight USA, January, 2008* – courtesy of publisher & author

"Early January, 2004, while working at my office in Holland, I received a very interesting phone call: 'Michael…we are looking for an operational 'bare metal' Curtiss C-46 Commando and we want to use it for a 'winter' fashion shoot in Alaska!'

No problem, I replied. As it just happened I had recently visited Alaska six months before and I got to meet with the Fairbanks-based Everts Air Cargo and company president Rob Everts. Alaska is the exclusive location (worldwide) to have four operational C-46s, while four examples remain stored at Everts Air's base in Fairbanks. Later that night I got in touch with Everts Air Cargo and started making the necessary arrangements.

Talking to Rob Everts, we finalized the deal and he told me that a second C-46, N1837M *Hot Stuff* would also be at Kenai should we need to use a back up aircraft. 'However, there are no guaranties,' he mentioned, as these aircraft are 60-year old World War II veterans and their R-2800 radial engines can be unpredictable at times. Additionally, the weather can be a major factor and it can play havoc on your flying schedule.

© Photo by Michael Prophet

Everts's C-46 *Salmon Ella* in a low pass at Palmer. The Everts are good friends of our SoCAWing.

Serving 13 scheduled destinations from Anchorage International Airport, including Fairbanks, Everts Air Cargo flies to Aniak, Barrow, Bethel, Dillingham, Emmonak, Galena, Iliamna, King Salmon, Kotzebue, Nome, St. Marys, and Unalakleet. Everts has seven active Douglas DC-6s and four Curtiss C-46s. With 40 pilots, Everts Air operates 90 per cent of its business from Anchorage and Fairbanks. May to October is the busiest time of the year. 'We fly vehicles, small trucks and cars, everything from boats to goats, is the standard motto,' said Everts. Everts Air has flown reindeer from Nome to Anchorage; construction materials to the Brooks Range; and even charters in South America.

Everts Air Fuel has been in the fuel air-delivery business for 38 years, and it operates two of the four vintage C-46s from Kenai Municipal Airport. It delivers fuel to the bush communities and roadless towns within the interior and along the Alaskan coast. Company owner Cliff Everts notes that the C-46s are invaluable to his business. 'It's an airplane that's very hard to replace, because it hauls twice the load of a Douglas DC-3, which is considered one of the all-time best cargo planes,' he said.

Most locations Everts Air Fuel delivers to are villages and outposts on the west side of the Cook Inlet (the water passage-way to Anchorage), such as Iliamna and Port Alsworth. But Everts Air Fuel also makes periodic runs to coastal villages like Shaktoolik or Unalaklett, where the landing area is just a short, unimproved strip or a sandbar.

© Photo by Michael Prophet

Unloading fuel from *Salmon Ella* at Beluga River.

According to Les Bradley, one of Everts's pilots, the C-46 is well suited for operations in Alaska because of its large forward landing gear and tail wheel configuration, which allows it to land or take off fully loaded at a minimum dirt strip length of 3,800 feet! The C-46's flight characteristics can be compared to flying a big Super Cub, says Bradley. 'It's like a heavy Mack truck – a great airplane that requires you to think ahead when flying it. You have to lead it and give yourself several miles. It never has tried to bite me!'

Whether the plane is hauling two 2,000-gallon fuel tanks bolted down on the floor of its cargo bay, or 70 large, 160-pound propane tanks standing on pallets, the Everts's C-46s can haul enough fuel to run a village for six months. The C-46s are very durable planes and will fly with minimal work, according to Bradley.

The glorious days of daily C-46 cargo runs, such as in Florida, the Caribbean, and South America are unfortunately long gone. Except for two U.S. warbirds, their exclusive domain is Northern Canada and Alaska. If longevity in service is one yardstick by which an airplane's greatness is measured, then the C-46 has earned such a memorable place in aviation history."

This article is from the "Flight Line" of March, 2008.

Restoration of Navy SBD Dive Bomber – Up from Lake Michigan

By Kyle Mitchell, *www.woodtv.com*
Kalamazoo, Michigan – Jan. 8, 2021

Photo Courtesy of The Air Zoo
Fuselage of Navy SBD brought up from Lake Michigan and being renovated at Air Zoo Restoration and Flight Discovery Center.

A Navy bomber that sat at the bottom of Lake Michigan for 65 years is getting a new life at the Air Zoo Restoration and Flight Discovery Center. A team of volunteers has been restoring the plane for more than four years.

Wayne Debroske, a Navy veteran who served in Vietnam, has volunteered 4,700 hours on the project. "We're trying to keep it as original as we possibly can, so we hunt for parts al over the world," Debroske said.

Once the plane is finished, it will be the only restored version. "It's actually been tagged as a national artifact," Debroske said.

The SBD Dauntless dive bomber played a crucial role in World War II. "The SBD is actually given credit for winning the battles of Coral Sea and Midway. It destroyed and damaged more enemy ships than almost all the other squadrons put together," Debroske said. This specific aircraft was damaged in the Battle of Coral Sea, repaired, and then used as a training aircraft in Lake Michigan, where it crashed in February, 1943, while attempting to land on a flat-top ship north of Chicago.

When it first came out of the water, actually, it was not in bad condition," Debroske said. The Navy kept the plane for restoration in Pensacola, FL for almost ten years before sending it to the Air Zoo. The condition deteriorated more during that time.

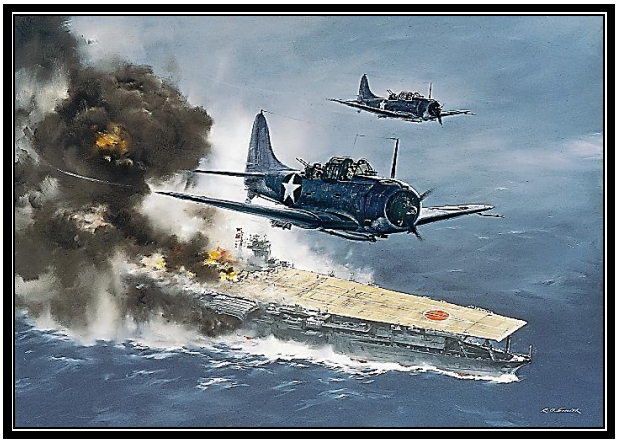
"It was quite a mess. It was pretty rusted. Everything had disintegrated quite a bit. They had removed the wings, the engine, so we had a lot of work to do when it got here," Debroske said.

Since the plane sat in freshwater and not saltwater for decades, it was considered in remarkably good condition for a restoration. Even with many more hours of work still to come, Debroske says, working on the project is worth every second. "It's kind of like honoring the guys that didn't make it back. The pilot that put this plane into Lake Michigan was later killed in combat," Debroske said.

The restoration has experienced some delays because of the COVID-19 pandemic. The volun-teers hope to have the project complete sometime this year.

The plane is the property of the Navy, and will be displayed at Pearl Harbor once the restoration is complete.

Photo Courtesy of The Air Zoo
The Douglas SBD Dauntless dive bomber after it was recovered from Lake Michigan.



"Midway" – painting by Wade McCluskey

***Actually, there are 6 airworthy SBDs in the U.S., and 15 others on display in the U.S.; 1 in N.Z. (DF)**

Edgar Schmued – Father of the P-51 Mustang

With thanks to Wikipedia

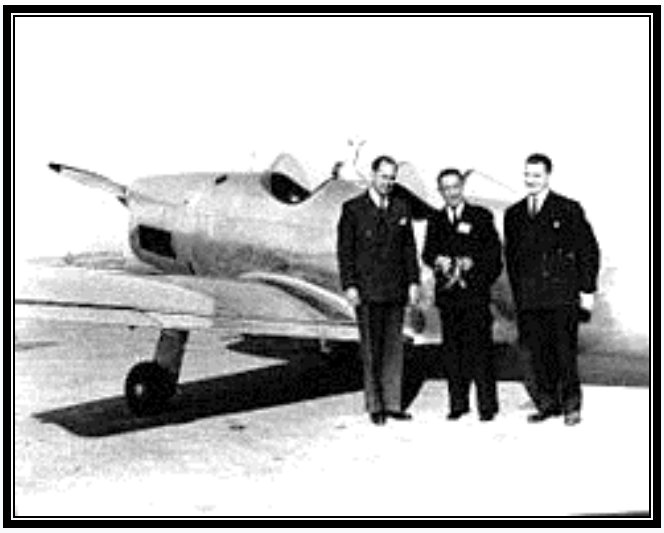
Edgar O. (Ed) Schmued (Schmüd), German-American aircraft designer (1899–1985) was famed for his design of the iconic North American P-51 Mustang and, later, the F-86 Sabre while at North American Aviation. He later worked on other aircraft designs as an aviation consultant.

Edgar Schmued was born in Hornbach, Germany, 30 December 1899. At the age of eight, he first saw an airplane in flight and decided that aviation was to be his life's work. Edgar embarked early on a rigorous program of self-study to become an engineer, and later served an apprenticeship in a small engine factory. He also designed several innovative engine components for which he received patents. In his spare time, he continued the self-study of aviation.

Schmued left his native Bavaria for Brazil in 1925, seven years after World War I had shattered the German economy. His experience in Germany led to employment with the General Aviation, the air branch of General Motors Corporation in São Paulo, Brazil. In 1931, he was sponsored to move to the United States through his excellent work for General Motors in Brazil (immigration rules were extremely strict at that time - he was one of 794 people admitted in the quota) and went straight to work for Fokker Aircraft Corporation of America, which was an aircraft company that was owned by General Motors and based in New Jersey. There he began his career as an aircraft design engineer. General Motors later sold its air arm and it became the forerunner of North American Aviation.

The talented and inventive Schmued, by now a citizen of the United States, was employed by North American Aviation (NAA) in Dundalk, Maryland. In 1935, North American was relocated to Los Angeles, California, by General Motors. When his wife Luisa proved reluctant to relocate from the east coast, Schmued joined Bellanca but his time there was short-lived. While traveling to California to work again for North American, the Schmueds were involved in a head-on collision on Route 60. Schmued's wife was killed, while he himself was seriously injured.

After recovering, Schmued went to work for "Dutch" Kindelberger in early 1936 as a preliminary design engineer. He was involved in the XB-21 (designing the front turret), creating the NA-50 single-engine fighter for Peru then going on to design work on the NA-62 (later the B-25 Mitchell). Schmued later became Chief of Preliminary Design.

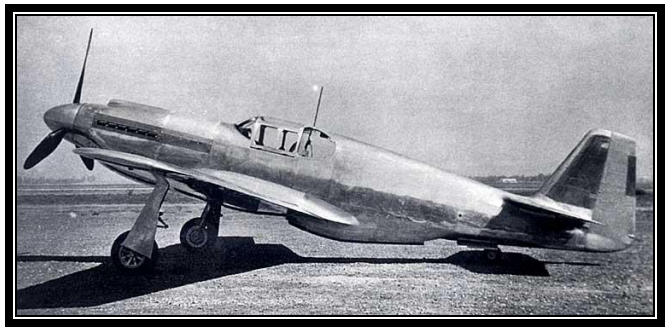


The NA-35 (later Vega 35) is shown at NAA's facility, with Edgar Schmued standing at the right.

During his long tenure at NAA, Schmued contributed greatly to the design of many airplanes. By far his most famous design was the highly successful P-51 Mustang of World War II. The legend began with NAA's President, "Dutch" Kindelberger asking, "Ed, do we want to build P-40s here?" Schmued had been long awaiting a question like this. His answer began the design process, "Well, Dutch, don't let us build an obsolete airplane, let's build a new one. We can design and

Photo by Eric Van Gilder
North American P-51D Mustang "Man O' War"

build a better one." His adaptation of the then new laminar flow wing and other innovations made the P-51 performance outstanding in all respects and its flying qualities superb. This aircraft was still winning races and setting speed records for piston engine-powered airplanes decades after its production had ended. Although he was renowned as a workaholic at North American, Schmued undertook the design of the Morrow Victory Trainer in 1941 on an independent contract; it was dubbed the "Mini-Mustang" because of its close resemblance to the P-51.



An early model of the P-51 Mustang

A Messerschmidt Bf-109

Fueled by a striking similarity of the early Mustang and the German Messerschmitt Bf 109 - pilots and ground crews of both sides confused the two aircraft - and Schmued's German origin, an urban legend has grown up, claiming he had once worked for Willy Messerschmitt and that the Mustang was heavily influenced by the Bf 109.

Neither claim is true but the urban legend persists. Schmued's team at NAA did receive, disassemble and inspect the first captured Bf 109 from the Spanish Civil War in 1939, and he regularly received copies of German Aeronautical Engineering Journals through 1941 supplied by Jim McGowan, ALCOA's consulting sales engineer. Just as familiar is the notion that the abortive Curtiss XP-46 was the basis of the P-51 design.

The North American F-86 Sabre

Schmued was employed by North American Aviation for 22 years. During his tenure, Schmued also designed the F-82 and, the other iconic NAA designs, the F-86 Sabre and F-100 Super Sabre.

The North American F-100 Super Sabre

After leaving North American in August 1952, Schmued spent five years as Vice President of Engineering for the Northrop Corporation. At Northrop he recruited a top engineering team he used to develop the successful F-5 supersonic light fighter and the closely related T-38 trainer. For these aircraft Schmued emphasized not only performance, but simplicity, safety, low cost, and

long service life. The resulting F-5 was not only the most cost effective U.S. supersonic fighter, but likely also the most combat effective U.S. air-to-air fighter design in the 1960s and early 1970s.

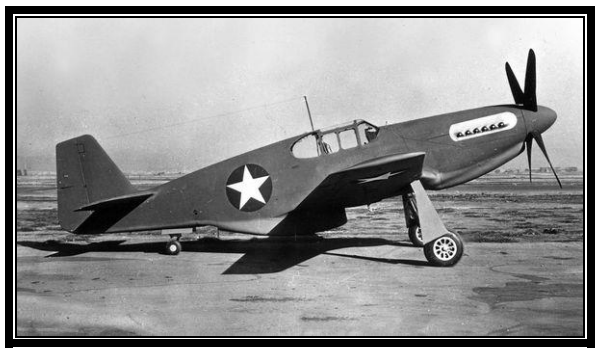
The Northrop F-5F

The well regarded and long-lived F-5 and the T-38 aircraft remained in active service as of 2018. The F-5 served as an adversary aircraft for the U.S. Air Force and Navy in fighter combat training, as well as a front line fighter in the air forces of more than 20 nations. The T-38 has served as the primary advanced/supersonic trainer for the U.S. Air Force for more than 50 years, a record unequaled by any other aircraft of this class.

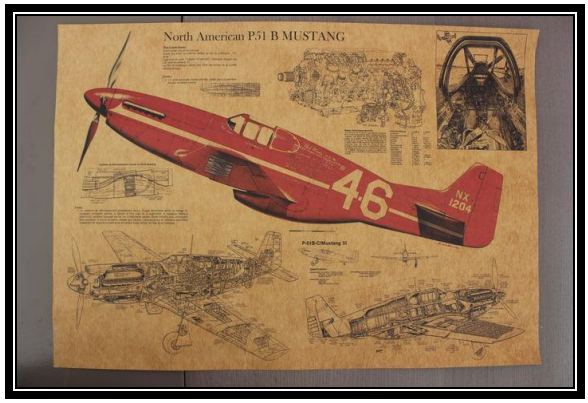
The Northrop T-38 Talon trainer

Edgar Schmued continued his aircraft design work as an independent consultant following his retirement from Northrop in October, 1957. He consulted for the U.S. Department of Defense, allied nations, for private companies, and for the film industry making aviation related movies. He worked actively until shortly before his death on 1 June 1985.

Any damned fool can criticize, but it takes a genius to design it in the first place.
— Edgar Schmued, Chief Designer, North American Aviation



An early P-51 Mustang model

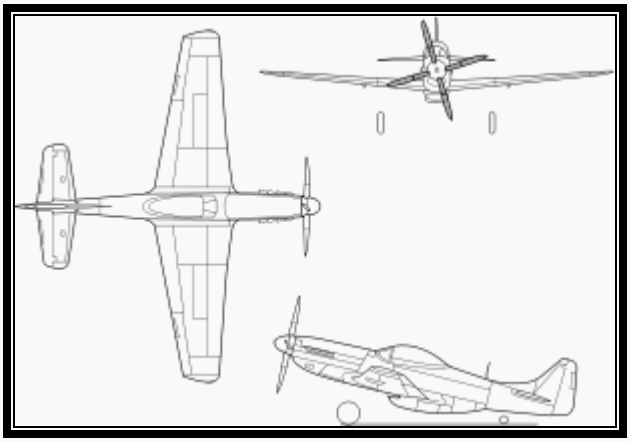


An illustration of a P-51C Mustang racer, with diagrams showing inside structures of he plane and the Merlin engine

Photo by Scott Slocum
Another shot of P-51 Mustang "Man O' War"

Aviation art by Jim Laurier
Famous P-51 WWII pilots, Chuck Yeager and Bud Anderson, 357th Fighter Group, taking off from Leiston, England.

Specifications (P-51D Mustang)



Orthographically projected diagram of the P-51D Mustang

General characteristics

- **Crew:** 1
- **Length:** 32 ft 3 in (9.83 m)
- **Wingspan:** 37 ft 0 in (11.28 m)
- **Height:** 13 ft 4.5 in (4.08 m) tail wheel on ground, vertical propeller blade
- **Wing area:** 235 sq ft (21.83 m^2)
- **Airfoil:** NAA/NACA 45-100 / NAA/NACA 45-100
- **Empty weight:** 7,635 lb (3,465 kg)
- **Gross weight:** 9,200 lb (4,175 kg)
- **Max takeoff weight:** 12,100 lb (5,488 kg) 5,490
- **Fuel capacity:** 269 US gal (224 imp gal; 1,020 l)
- **Zero-lift drag coefficient:** 0.0163
- **Drag area:** 3.80 sqft (0.35 m^2)
- **Aspect ratio:** 5.83
- **Powerplant:** 1 × Packard (Rolls Royce) V-1650-7 Merlin 12-cylinder liquid cooled engine, 1,490 hp (1,111 kW) at 3,000 rpm; 1,720 hp (1,280 kW) at WEP
- **Propellers:** 4-bladed constant-speed, variable-pitch Hamilton Standard, 11 ft 2 in (3.40 m) diameter

Performance

- **Maximum speed:** 440 mph (708 km/h, 383 kn)
- **Cruise speed:** 362 mph (583 km/h, 315 kn)
- **Stall speed:** 100 mph (160 km/h, 87 kn)
- **Range:** 1,650 mi (2,656 km, 1,434 nmi) with external tanks
- **Service ceiling:** 41,900 ft (12,800 m)
- **Rate of climb:** 3,200 ft/min (16.3 m/s)
- **Wing loading:** 39 lb/sq ft (192 kg/m^2)
- **Power/mass:** 0.18 hp/lb (300 W/kg)
- **Lift-to-drag ratio:** 14.6
- **Recommended Mach limit** 0.8

Armament

- **Guns:** 6 × 0.50 caliber (12.7mm) AN/M2 Browning machine guns with 1,840 total rounds (380 rounds for each on the inboard pair and 270 rounds for each of the outer two pair)
- **Bombs:** 1,000 pounds (450 kg) total on two wing hardpoints
    - **Each hardpoint:** 1 × 100 pounds (45 kg) bomb, 1 × 250 pounds (110 kg) bomb or 1 × 500 pounds (230 kg) bomb)
    - **Rockets:** 6 or 10 × 5.0 in (127 mm) T64 H.V.A.R rockets (P-51D-25, P-51K-10 on)

Photo by Pat Brown – (circa 1983)
CAF So Cal Wing member Buddy Geoffrion with Edgar Schmued (right) at Van Nuys Airport, where Edgar gave a talk to the new Wing members. Note the North American P-51 Mustang in the background, which belonged to Clay Lacy Aviation. Clay was an early member of our Wing, and raced the Mustang at Reno.