WOODLAND/DAVIS AEROMODELERS

Dec Newsletter 2019

Prez Sez: Hi everybody. Its December and I am looking forward to the Chilly & Chilly fun fly on 1 Jan, Forest is coordinating the food so, if you are going to come out, let him know what you are bringing for food, just so everyone doesn't bring desert (personally I would be fine with all deserts).

As I write this, I am taking a break from working on another foamy (sorry Chris), but I could not pass up the Turkey day sale from horizon for the P-39 Air Cobra. No room in the garage so the dining room table is it.

Remember club elections are this month, we have nominations for most of the open position, there is still time, please think about serving or nominating someone you think will do a good job. If you don't like the way things are managed in the club, this is your opportunity to have a voice in the process. Please remember to wear your hat, sunscreen and display your club card when flying. Kerry

NEXT WDA CLUB MEETING

Woodland Library, Leake Room

Monday Dec. 9th @ 7pm

Board meeting @ 6pm

CLUB OFFICER NOMINEES

Nominations will be open until the December Meeting, then we will vote at the meeting, **please plan to attend.**

Nominations for club officers to date:

- for President: **Robert Kozowski**
- for Vice President: **Doug Vice**
- for Treasure: **John Eaton**
- for Secretary: **Mike O Kane**
- for Board Member: **Keith Young**
- For Board Member: **Bill McGaughey**

November 11, 2019 Board Meeting Minutes

Board Members/Officers present: President: Kerry Roberson, Treasurer: John Eaton, Secretary: Mike Frint. Board Members: Doug Barton, Sheldon Berkowitz, Mike O'Kane, Danny Winters. **Absent:** Vice President: Doug Vice, Board Member: Chris Dellinger. Safety Officer: John Lett.

The meeting, held at the Woodland Round Table Pizza restaurant, was called to order by Kerry at 1813 hours. Veterans Day observance made the library unavailable. Ten members were in attendance. No guests or new members.

A motion was made by Doug B. to approve last month's Board meeting minutes. The motion was seconded by Danny and adopted.

Officer Reports:

President: Kerry had nothing to report.

Vice President: Doug V. was absent.

Treasurer: John reported that he had to transfer $1500 from savings into checking. Expenses were largest for the port-a-potties, plus add utilities, bank charges, field maintenance and supplies, dump fees and mower repairs. Income from events, donations and dues resulted in $504 in net income. Money should be coming in from membership dues soon. Kerry added that he wants to know the total cost of the water/electrical project.

Secretary: Mike had nothing to report.

Membership: We still have approximately 100 paid up members.

Safety: John was absent.

Chair reports:

Field Chair: Doug V. was absent.

Newsletter: Rich was absent.

Points: Stein was absent.

Website: Kerry stated that the website, including points to November 5th, was current as of this meeting. Are folks writing down their points on the clipboard at the field?

Old Business: **Water supply/pumps/electrical-**the water pump has a cracked seal and needs a new seal. **Shade structure**-the tarps near the snack shack have been taken down. Should we leave the other one up? It seems to have survived previous storms. **Gravel repairs at parking lot to pit entrance-**although this was tabled until January, timing worked out so that some dirt, rocks and some old Petromat was added. Some fencing has been taken down. Robert Kozlowski got some donations and that's why this happened so quickly. We need to plan for the new fencing and curbs so that cars don't park on the matting.

New Business: see Events. **Parade Float**-Danny proposed that the club build a float for the West Sacramento Veteran's Day parade next year with some warbird models and such. **Drones-**Keith Young is the contact with UC Davis and wanted some clarification for their folks using the field. The answer is that WDA had previously approved up to 25 pilots. Non-flyers who show up don't need membership cards as they are visitors/helpers. **Donation**-Sheldon donated a 1/3rd scale pilot head to anyone who wanted it. Kerry took it home.

Nominations: Will start during the General meeting tonight. Elections for club officers and two Board member positions is scheduled for the next meeting.

Upcoming Events: Monty Welch is planning an unofficial, previously unscheduled, warbird fun fly December 7. Chilly and Chili fun fly on Jan 1. Forrest will be doing the food coordination again. Thanks Forrest!

Meeting adjourned at 1832 hours.

November 11, 2019 General Meeting Minutes

Board Members/Officers present: President: Kerry Roberson, Treasurer: John Eaton, Secretary: Mike Frint. Board Members: Doug Barton, Sheldon Berkowitz, Mike O'Kane, Danny Winters. **Absent:** Vice President: Doug Vice, Board Member: Chris Dellinger. Safety Officer: John Lett.

The meeting, held at the Woodland Round Table Pizza restaurant, was called to order by Kerry at 1904 hours. Veterans Day observance made the library unavailable. Thirteen members were in attendance. No guests or new members. Bill Ragsdale made a rare appearance so it felt like we had a new member.

A motion was made by Art W. to approve last month's general meeting minutes. The motion was seconded by Mike O. and adopted.

Officer reports:

President: Kerry had nothing to report.

Vice President: Doug V. was absent.

Treasurer/Membership: John repeated what he said during the Board meeting. We have 100 members.

Secretary: Mike had nothing to report.

Safety: John was absent.

Chair reports:

Field Chair: Doug V. was absent.

Newsletter: Rich was absent.

Points: Stein was absent.
Website: Kerry stated that the website was current as of this meeting. Make sure to write down your work time at the field.

Old Business: **Water/power/electrical supplies--**the water pump has been moved but has a cracked seal and needs a new one. **Shade structure-**Mike O. states we need to draft up the proposal to duplicate the structure at Lifepoint Church. Doug B. suggests looking at the structures at Woodland Christian School. **Picnic Tables at field-**Jim Saare has started to refinish the picnic tables. Some parts are located in the snack shack. Doug B. added that he obtained some real nice cabinets to be placed in the connex.

New Business: **Work party-**unscheduled work has been done the past two Saturdays because of-**Parking lot to pit entrance areas-**Robert Kozlowski donated some dirt and gravel and even a truck and with help from members installed it in these areas. Some old Petromat was laid down. Use caution as some of the fence has been removed and don't drive on it.
Nominations: Started tonight. Elections for club officers and two Board member positions is scheduled for the next meeting. Ben Ponzo nominated Robert Kozlowski for President. This was seconded by Sheldon. Kerry will not run again. John is willing to stay on as Treasurer. Sheldon will not continue as a Board Member. Nominations will reopen at the next meeting followed by elections.
Upcoming events: Warbird fun fly December 7. Chilly and Chili fly in on Jan 1. Forrest is again coordinating the food. Forrest may bring the glider winch if the weather is favorable.
Toilet Seat Award: None. A couple of crashes were discussed but nothing stupid.
Stolen Airplanes: Doug B. pointed out that some control line models were stolen at the Madera event. Keep an eye out for these and don't keep your models in your vehicles when staying at a hotel.
Show and Tell: John Eaton brought his three meter Bird of Time sailplane. Lou Fox started it, sold it to Ed (?) who sold it to John. John has not flown it yet. He hopes to see more glider activity in the club.
Airspace Discussion: A short discussion about airspace, Letters of Agreement and ADS-B ensued. Ben stated that his telemetry indicates that 400 feet is higher than you think. The crop dusters were mentioned. We have talked to them several times about our facility. Kerry and John both said there is not a lot of agricultural activity east of us anyway. John said we have to make sure that "see and avoid" works in that we see and avoid the full scale planes nearby. Full Scale aircraft always take priority.
Other: For us to use the restaurant's private room we need to make sure we purchase a minimum of fifty dollars. We almost didn't make that amount.

The meeting was adjourned at 1950 hours.

***Editor's Note**: I want to THANK out-going club Secretary, Mike Frint, for his well-written and perfectly formatted Meeting Minutes submissions each month. His attention to detail made my job MUCH easier.*

WELL DONE MIKE!!

Blast from the past… The event was the annual WDA ducted fan jet event, which at that time was held in the month of June. The R/C report article was from June 2000. The two guys working on the plane were Stan Lyons and Donnie Otting. *~ Monty Welch*

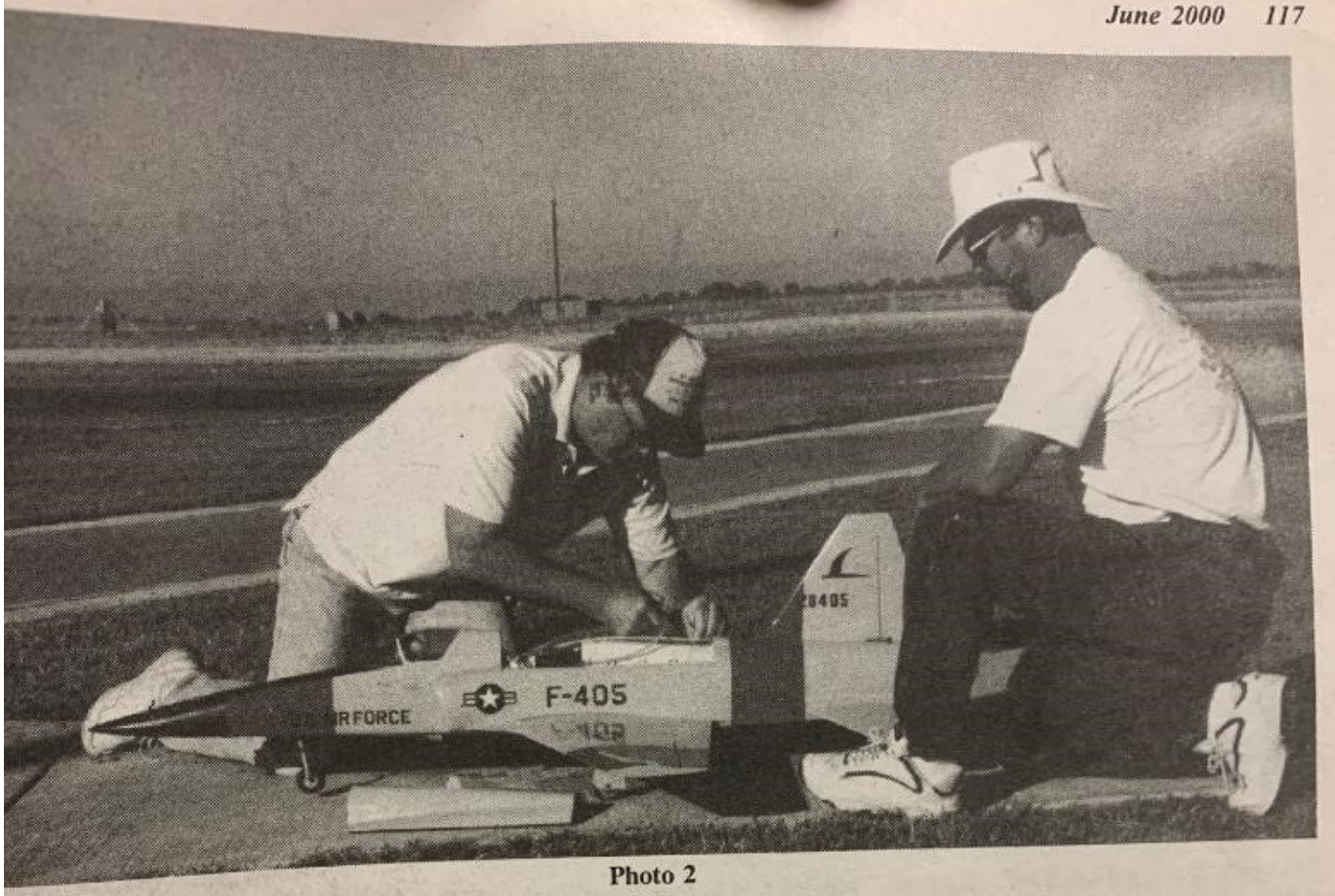


Photo 2

Chris called a pilots' briefing kick off the event, and welcomed everyone to the 13th Annual n Jet Fly. He also thanked Mon- for all his work in making it ppen. He mentioned the runway nprovements made since last ear's meet, since the landing area as been widened to 50', and lengthened to 600'.

Chris reminded the pilots that every model must pass a safety inspection. He also asked them not to fly near the pits, and to stay away from the county road about 400 yards to the west. Pilot stations #1 and #2 are set up for starting turbines, and a crash truck is on duty to extinguish any grass fires if a turbine should crash. Speed runs are the only organized event for this meet, and Ron Holt, all the way from Sumner, WA, brought a speed trap for this purpose.

real F-5 Tiger that hangs in the Seattle Museum of Flight. Powered by a K&B (BVM) .82 fan engine spinning a Ramtech fan, Stan soon had it running to his satisfaction. Stan likes to be the first aircraft in the air at jet meets, and he was the first one up today!

The Sport Shark made a straight run, using only half the runway before lifting off. With the gear retracted, he flew down wind, turned to come back into the wind, and then did a beautiful 4-point roll the full length of the field! This was followed by a climbing roll to about 400', a Figure 9 loop, a high speed pass into a roll, and a 4-turn vertical roll to about 500'. Then he came down to maybe 200', and cut the throttle as he entered the landing pattern, making a smooth and impressive touchdown. Stan said afterwards that every time he went to full throttle, the engine threatened to quit, so he had to nurse it along for the entire flight. When he checked the engine after landing, he found the tuned pipe had come loose.

The noon-time viewing with all the planes on the runway: Wayne Cook's Panther at the front.

From the Kitchen Table

by Jim Kitchen

Photo 1

FAN JET FLY

Photo 1 is the noontime display at the 13th Annual Fan Jet Fly held at the Woodland-Davis Aeromodelers flying site near Woodland, CA. Jet aircraft are lined up on the runway for the spectators to see up close, to photograph, and chat with their owners and pilots. Wayne Cook's 72" span F9F Panther, seen in the foreground, was built from a Ziroli kit, and uses an O.S. .91 engine and Ramtech fan for thrust. It later won the Best Aircraft award.

Flags waving in the breeze indicated a 5-10 mph wind, while the pilots were busy setting up their pits and assembling their jets. These models will easily handle the wind, and it will actually help takeoffs and landings.

Chris Dellinger was the CD, with Monty Welch helping out as assistant CD. Chris is an ex-C5 pilot who now flies 747 cargo jets for Atlas Air out of JFK in New York. Modeling has taken a back seat to Chris's piloting career for now, so Monty did most of the work in putting the Fan Jet Fly together. Some of Chris's ducted fan models are for sale today.

Modelers' Corner

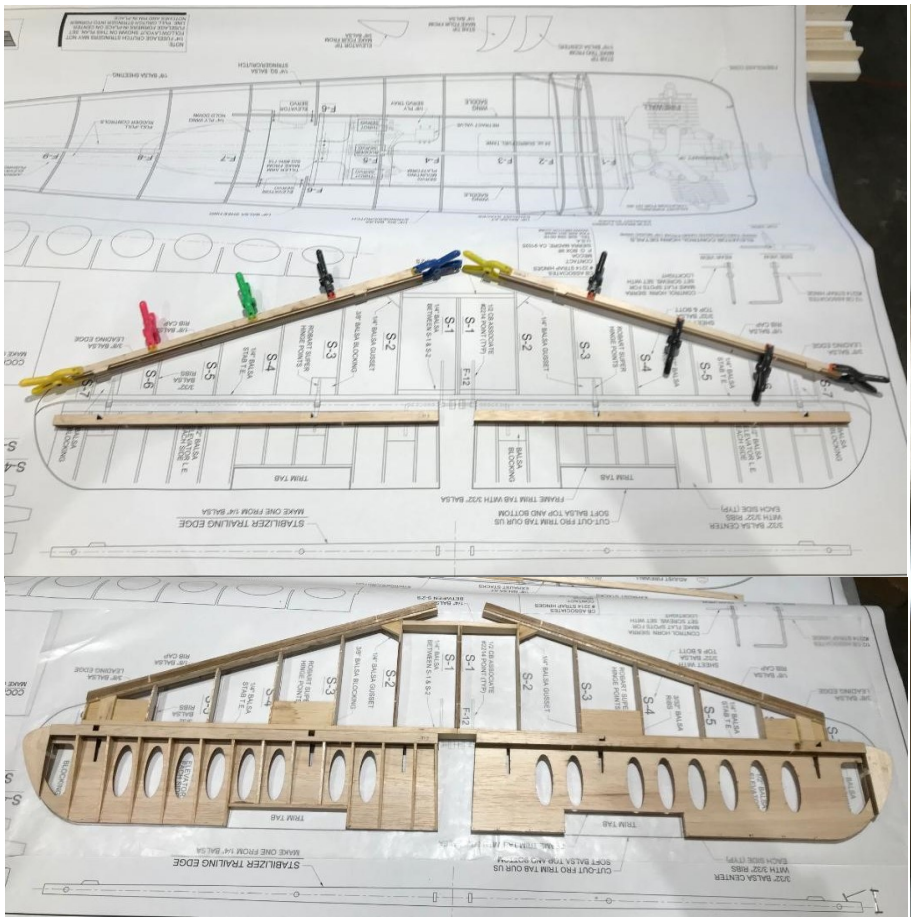
Having attended the California Capitol Airshow again this year, I was smitten by an airplane that had been on my bucket-list long before seeing it perform… the Grumman F8F Bearcat. In a tribute to the first Blue Angels, a Hell-cat and Bearcat flew in tandem at the show. The sound of their P&W R2800 radials was, of course, AWESOME!

Each time I would fly my CARF Sukhoi SU-31 aerobatic plane with the Moki 180, it conjured up visions of what WARBIRD I might power with the big radial..? And for some unexplainable reason, a Blue Angels Bearcat kept coming to mind. Seeing the Bearcat and the Blue Angels at the CA Capital Airshow, I came away on a quest to create a new platform for my Moki.

Jerry Bates plans are well-known for their fidelity to scale and VicRC is well known for producing quality fiberglass parts for same. I ordered the 1/5 scale Bearcat plans from Jerry Bates, glass parts from VicRC, and laser cut short kit from Bob Holman. Just recently, I $wallowed very hard, and ordered the $cale articulating main gear, tailwheel unit, wheels and air support from $ierra Precision.

Some of you know I have worked on and off for several years, on a Grumman Wildcat. While I still love that airplane, the quirks of this hobby often dictate that we go off on tangents which delay completion of some projects… so, the first Grumman monoplane fighter will just have to wait a bit longer while I jump feet first into the last Grumman prop fighter of WWII.

I acquired a scale-ish 4-blade prop from Aircraft International and have been running the Moki 180 on my test stand just to get an idea of the look and sound of that engine/prop combo. Can I say it's AWESOME? I also wanted to see how the engine runs without the electric fuel pump. After some high and low needle adjustments, I find it runs perfect and is actually MUCH easier to start now. The electric fuel pump was frequently flooding the engine, so for those of you who saw me struggle to start the Moki, now we both know why that was. Without the fuel pump, the Moki starts like all my other gas engines start, using exactly the same proven routine.



ON TO the Bearcat… Bates' instructions, being for a built-up 1/5.5 scale Bearcat, are more akin to building "suggestions" as there are many differences between the fully built up version and this slightly larger 'hybrid' glass and wood version. I find I am referring to the plans, mostly. I began construction with the stab and elevators, moving on to the rudder then installing various plywood formers in the glass fuselage.
As you can see from the pictures, the stab was conventional construction, but did require shims of various thicknesses under the leading and trailing edges to maintain the correct taper, at least until the top sheeting was in place.
The elevators, like the rudder, required substantial material be removed for the proper fit and deflection.
I always draw a centerline on the leading edge so I can see if I am removing material equally.

The completed horizontal stabilizer, elevators, and rudder

The glass parts from VicRC consist of the fuselage, cowl, bellypan and gear covers, wing oil

cooler inlets, canopy frame and clear canopy

As I am in the infancy of this project, there isn't a whole lot to show yet. Suffice it to say, it's tons o' fun cutting,

sanding and gluing wood (especially balsa) again! Composites are nice, but not what attracted me to this hobby in the first place. But as is the case with a complex scale project, they do indeed speed up the construction process!

The Moki 180cc 5 cylinder radial is at the far end of the recommended power and weight for this 86" span Bearcat F8F-2, but the sound and look should really be something.

Of course, this Blue Angels Bearcat will have a smoke system :-)

I should mention that the F8F-2 had a taller vertical fin than the –1… about a foot taller. This was to compensate for the increased power of the later Pratt and Whitney R2800-30W which achieved 2,250 HP.

I am thinking the –2 tail will be ideal in helping to keep this airplane going straight while being pulled around by the Moki. Until next month...

Editor's Note:

While I had every intention of writing a clever and informative article on my inspiration for this project, I found the following article online that tells the story far better than I. WHY re-invent the wheel?

F8F Bearcat: An Engine With a Saddle

By ***Stephan Wilkinson***

What the bantamweight Bearcat lacked in finesse it made up for with brute strength.

The Grumman F8F Bearcat is the Dodge Viper of airplanes. Both are outrageous, lightweight, in-your-face-American, monster-motor artifacts of fast-disappearing eras, designed on the cheap and produced quickly. The car/airplane comparison even extends to the fact that both have what might be considered truck engines: the Viper a V-10 originally intended for big Dodge pickups, the Bearcat an 18-cylinder, 2,250-hp radial (in the F8F-2) that some fighter purists would consider a "bomber engine."

Like a Viper, the Bearcat was about as utilitarian as a funny car. It couldn't carry much, couldn't go far, was uncomfortable, super light, loud as hell and had just one mission in life: to be fast and agile. "No missiles, no radar, just a nasty, mean little street fighter with an attitude," as Commemorative Air Force Bearcat demo pilot John Deakin puts it.

But even before the big Dodge sports car existed, there were automotive comparisons to the Bearcat. Said one 1950s Navy pilot, "The Hellcat was a Buick, the Corsair a Cadillac, but the Bearcat was a Maserati." Another likened it to a Harley-Davidson, a classic celebration of Yankee excess. And to revert to an even earlier transportation era, a third tailhooker called the Bearcat "an engine with a saddle." He wasn't kidding. The Pratt & Whitney R-2800 engine weighed about 3,000 pounds, and the airframe behind it totaled 4,000 empty. To say a Bearcat was half engine isn't much of an exaggeration. "Pretty hard to strap a bigger engine on a smaller airframe," Deakin points out.

The F8F was designed as a special-purpose airplane, to simply launch, climb like a rocket and intercept incoming Japanese aircraft. Into a typical over-the-deck headwind, a Bearcat had a 200-foot takeoff roll, less than two-thirds of an F6F Hellcat's, and even on a landlubber's runway it was difficult to get the throttle two-blocked before liftoff. The Bearcat carried little fuel but didn't need much for this mission, and it had a rate of climb unequaled until the jet age; it could do nearly 6,400 feet per minute to 10,000 feet. But contrary to one Bearcat myth, it wasn't designed as a kamikaze-killer, since the first true Japanese suicide planes didn't strike at Allied ships until October 1944, when the Bearcat was already well into its flight test program.

The Bear was late to the party nonetheless. The first F8F air wing arrived in the Pacific theater literally days after the war ended, and the Bearcat was never to see combat in U.S. hands—not even in Korea, where its

relatively basic armament wasn't good enough for strafing and the longer-legged F4U Corsair was judged to be a better fighter-bomber. The French, however, did use Bears as mud movers during their Indochina war, the only time Grumman's last piston-engine fighter ever saw combat. (As a young merchant seaman in the mid-1950s, I saw a pile of wrecked C-47s and F8Fs on a wharf in Saigon, waiting for shipment to who knows where. An airplane nut in bell-bottom dungarees, I snuck through the rows of battered aluminum until I found myself on the wrong end of two automatic weapons in the hands of South Vietnamese soldiers, but it was my very first contact with a Bearcat.)

Ultimately, not a single Bearcat ever performed the mission for which it had been designed—air-to-air combat—whether in the hands of the U.S. Navy and Marines, the French, the South Vietnamese or the Royal Thai Air Force. Nobody will ever know what kind of air superiority fighter it might have been, and it remains one of the 20th century's great what-if aircraft. ("What if a Bearcat and a Kawanishi *Shiden-kai* had ever faced off? What if a Bearcat and a Focke-Wulf Ta-152…a Bearcat and a Hawker Sea Fury…" and so forth on every Internet warbird forum.)

Still, the Bearcat was particularly loved by pilots. Neil Armstrong famously once said it was his favorite airplane, and the widely warbird-experienced Deakin agrees: "The Bearcat is my personal favorite. Handling, power-to-weight ratio, and all of it in a package that's pleasing to the eye. It looks like a muscle machine, and it is." British test pilot Captain Eric Brown, who has flown more aircraft types (487) than any other pilot in history, has 20 favorites that he's tested, and only one American prop-driven fighter appears on the list—**the Bearcat**.

Steve Hinton, one of the world's most experienced warbird pilots and racers, says, "Oh, yeah, it's my favorite airplane to fly. If you add up all the qualities of the airplane, it comes out on top. The speed, the ease of flying it, control feel, the rate of climb is spectacular…it's pretty exciting. As far as flying qualities and looks go, it's number one."

Another enduring legend about the Bearcat is that its design was inspired by the Focke-Wulf Fw-190, and that many of its features were copied from the German fighter. Some even claim that Grumman had a Focke-Wulf at its Bethpage airfield on Long Island, N.Y., and that Grumman test pilots flew it there, which is not true.

Grumman pilots did fly a captured Fw-190 in England in September 1943, according to former Grumman test pilot Corky Meyer, and again at the Navy's Patuxent River test facility the next year. But the Bearcat's specific parameters had already been laid down in considerable detail in July 1943, two months before any Grumman pilot or engineer had ever seen a Focke-Wulf. It would seem that the chronology makes it impossible for the Bearcat to have been inspired by the Fw-190.

"I suspect that this is either an outright urban legend or a story with some small grain of truth," says aviation historian Richard Hallion, who makes the case that development of the Bearcat was simply a legacy of the Navy's encounter with the light, agile Mitsubishi A6M2 Zero. As a result of Grumman F4F Wildcat/Zero combat, the original Hellcat "was completely redesigned as a much lighter and more powerful airplane," Hallion says, "hence it first appeared in service in 1943 as the F6F-3, not the F6F-1. The Bearcat represented what squadron pilots really wanted even in 1942: high power-to-weight ratio, small, agile, sufficient armament and optimized as a dogfighter."

The Bearcat and Fw-190 were very close in size—something that could be said of many fighters—and both had radial engines. Beyond that, there are no important parallels or similarities, and to say the German land-based fighter inspired creation of the U.S. carrier-borne fighter would require the preposterous assumption that Grumman engineers were unaware of the benefits of light weight, agility and a high power-to-weight ratio and needed to fly a German airplane to discover those qualities.

Yes, certainly the Grumman pilots' stick time in the Focke-Wulf would have shown them that the company was on the right track in building a small, mean, uncomplicated fighter, but there was nothing Leroy Grumman or Bill Schwendler needed to learn from the Germans. Thompson Trophy raceplanes of the 1930s had already made it clear that putting the biggest engine in the smallest airframe produced high speed, and it was no coincidence that Robert L. Hall was one of the two Grumman pilots to fly the Focke-Wulf. Hall had worked for Granville Brothers Aircraft and participated in the design of the Gee Bee Model Z, the first of several barrel-bodied Granville racers. Hall left Granville to design and race his own Thompson competitor, the Hall Bulldog, a big-engine/small-airframe gullwing design that looked a bit like a high-wing Gee Bee.

The Focke-Wulf legend has it that Hall, "Grumman's chief engineer," rushed back to Bethpage to design the Bearcat, and he's sometimes even referred to as "the Father of the Bearcat." In truth Hall was the assistant chief engineer experimental and a test pilot, and if anybody was the Bear's daddy, it was Chief Engineer Bill Schwendler.

Flying the Focke-Wulf would certainly have shown Hall that the distinctive humpbacked outline of the Bearcat's fuselage would be a benefit, for the one thing Grumman pilots found lacking in the 190 was a good view over its nose for finding, tracking and leading gunnery targets. F8F pilots had a splendid forward view, sitting somewhat above the big radial engine's cowling—not a bad thing for carrier landings, either.

On July 28, 1943, with Hellcat production pretty much taking care of itself, and F7F Tigercat design and engineering nearing completion, Roy Grumman proposed a Hellcat successor. It was to use the F6F's R-2800 engine, be roughly the size of a Wildcat, weigh no more than 8,500 pounds with full fuel and be armed with just four .50- caliber Brownings, which were thought to be quite adequate for downing the lightly armored Japanese Zippos. (Fighter pilots always want more, so a number of later-production F8F-1s and all the -2s were fitted with four 20mm cannons in place of the machine guns.) The 8,500-pound weight criterion was soon changed to 8,750, but Grumman still never quite made it, and the basic airplane ended up at 8,820 pounds wet; stressing an airplane to withstand carrier landings and tailhook snubs inevitably adds weight.
"It was one of the first fighters designed for lightness," Hinton says. "Typically, [fighter engineers] just built the hell out of 'em, because they really didn't know what they were up to. But Grumman went out of its way to save weight, and the airplane's speed actually came out 40 miles an hour over spec."
Roy Grumman also stipulated a full-vision bubble canopy, a first for a Navy fighter. Such canopies were a British invention, a product of their Battle of Britain combat experience. The Army Air Forces soon adopted them for most P-47Ds and the P-51D, but oddly the Navy never used them in World War II. The Bearcat and the Goodyear F2G Super Corsair, of which only 10 were ever made, were the sole Navy piston-engine fighters to have full-vision hoods. (The Ryan FR-1 Fireball had a semi-bubble, with the aft third all metal.)
Grumman wanted the new fighter to be as light and simple as possible, and this led to another Bearcat myth—that it was intended to operate from small escort carriers and therefore was a Wildcat replacement, since F4Fs remained in the jeep carrier air wings even well after the big F6F came into the fleet. This misunderstanding devolved from the fact that Roy Grumman added a codicil to his Bearcat memo, warning Schwendler that "In order to check Bureau [of Aeronautics] tendency to overload, this design should be sold as a 'converted-carrier' fighter." Converted carriers were CVEs, often merchantman hulls that had been flat-topped as escort carriers, and Grumman knew if the Navy realized he intended this new design to operate mainly off big CVs, BuAer would demand more guns, gas tanks, fancy systems, bigger wings and the like, and soon the company would be building a 12,000-pound limo rather than the hot rod it wanted.
Despite worries about BuAer, in 1943 that office was staffed by at least some Navy desk pilots who'd had their tickets punched flying light, maneuverable Boeing and Grumman biplane fighters in the 1930s. They loved the F8F concept: a Hellcat Lite, a Hellcat Hot Rod, a minimum-weight/maximum-performance, short-legged stripper designed to fill an air superiority gap that, it was presumed, might open when the Japanese fielded their next generation of 2,000-hp, post-Zero navy fighters, which in fact never materialized.
In pursuit of lightness, Grumman not only limited the F8F's fuel load and armament, it also dispensed with nice-but-not-necessary systems such as powered wing folding and hydraulic tailhook retraction. After a Bearcat deck-landed, aircraft handlers lifted the tailhook back into place, then folded the wings by hand, sticking a big prybar into a socket under the folding wing panel and using leverage to muscle the wing straight up and a bit inward. Nor was there even a prop spinner, which gave the Bearcat its characteristic face, like a prizefighter whose nose had been mashed once too often. The enormous AeroProducts four-blade prop carried a dedicated oil supply that altered prop pitch in a doughnut-shaped tank behind the propeller hub. This meant there wasn't even the usual distinctive mini-spinner dome ahead of the hub, which on conventional constant-speed props held the mechanism to dispense engine oil to the blade controls.
That 12-foot-4-inch propeller—only a foot smaller in diameter than the far larger and heavier F4U Corsair's enormous prop—required extremely long main gear legs for ground clearance. Even so, Bearcats typically lifted off and landed in a nose-up attitude to avoid prop strikes. "It's very easy to ding a prop, and it's a rare one," says Deakin. "It would almost certainly today mean a switch to a modified prop from another airplane, and possibly an engine swap to accommodate it. We [the CAF] have a lot of trouble with the prop, due to no parts being available."
"These fighters are all designed to take off that way," explains Hinton. "It's actually easier to just let the airplane accelerate and take off already in a climb attitude than it is to push the tail up. Trim it up, put the power to it and there's very little torque effect when you take off tail low. If you get the tail up, you're fighting gyroscopic P-factor."

The gear legs were unusual in having a pivot point about a foot below the main gear-to-wing trunnion. Upon retraction, the upper portion of each gear leg would fold outward while the rest of the strut retracted inward, toward the fuselage. The wings, with the same NACA 230-series airfoil as the F6F, were just big enough to carry four guns, two wheel wells, flaps and a few cables. There were no wing tanks, just a single 185-gallon fuel tank behind the cockpit. One unusual extra was a pair of small dive-recovery flaps just behind the wheel wells. Like the Lockheed P-38, which pioneered dive flaps, the Bearcat could go downhill so fast that transonic shock waves would develop, immobilizing the ailerons and making recovery impossible. Deploying dive-recovery flaps backed the airplane out of this danger zone and at the same time added a pitch-up moment to aid recovery. On the Lightning it happened automatically; in line with the Bearcat's simplicity, its dive flaps had to be manually deployed.

If the Bearcat had a vice that could catch new pilots, it was that "it's easy to overstress it," Deakin says. "Contrary to the opinion of most, the airframe is not highly stressed—strong enough, but not as rugged as it looks. This might have made it poor in actual combat, but we'll never know." Hinton agrees, pointing out that the Bearcat is "an airplane that can lure you into a false sense of security. Early in its career, the Bearcat went right into training squadrons, since the jets were right around the corner. So they had a lot of new guys flying these things, going really fast, pulling a lot of Gs, and they did have problems, including hard deck landings that transmitted into issues with fatigue and wings coming off."

Bearcats had no air conditioning, so pilots learned to dress as lightly as they could. They were sitting behind an 18-cylinder furnace, their feet inches from the firewall and the engine's accessory section, under a Plexiglas solarium. Nor was that seat adjustable, since the necessary mechanisms and fuselage strengthening would have added weight. Pilots used cushions (and of course their seat-pack parachute) to adjust their seating positions. The starting drill required the canopy to be closed no matter how hot it was, since the big radial's exhaust pipes were ideally positioned to spit an oil mist into the cockpit on startup. Some production Bearcats had a "windscreen degreasing control" that sprayed an oil-dissolving solvent to clean off the usual mess.

One of the Bearcat's most unusual weight-saving measures was its "Safety Wing Tips," which was the positive-spin wording that Grumman put on this strange feature. Grumman engineers figured that if the airplane's wingtips could be designed to torque off if nine Gs was exceeded in a combat pullout, the wing inboard of that juncture could be built more lightly yet would still support a 13G ultimate load, since the full wing would not be required to carry that load. Sounded like a good idea at the time, as they say.

One problem was that both wingtips should go simultaneously, though flight testing showed that the Bearcat flew pretty well with just one wingtip and half of its aileron gone. The airplane was actually so overpowered that it probably would have flown at least a short distance with no wings. Tests also made it plain that the Bearcat flew just fine without the outer 3 feet of both wings, and could be carrier-landed in such a configuration. Many Bearcat sources, both published and online, claim that the zipper was not 3 feet from the tips but shed the entire 6 feet of each wing that folded for carrier storage. Which seems reasonable other than the fact that it would have left a Bearcat with no ailerons. Not a good idea.

So Grumman tested a prototype with explosive primer cord wrapped inside each wing to blow each of the tips off roughly simultaneously. Which ever one severed first from the G loads during a test dive would send a signal via a microswitch to the opposite tip for the primer cord to blow it off as well. Grumman insiders referred to it as the "ice-box switch"—like the one that turns off the light when you close the refrigerator door—an indication of how small that switch actually was.

That worked just fine, though the shrapnel made chase plane pilots flinch during testing, so Grumman began to build Bearcats with explosive bolts—and, assumedly, ice-box switches—to shed wingtips when necessary. An earlier crash after an asymmetric tipshedding dive pullout, plus an incident where a Bearcat killed a ground crewman when a wingtip blew off inadvertently, led to a "more trouble than they're worth" decision by Grumman, and the wings were made solid and the airplane's G limit lowered. Some claim the Safety Wing Tips were a great idea that Grumman simply didn't have time to engineer properly under the press of wartime deadlines, but the fact remains that nobody in the six decades since the Bearcat was built has bothered to seriously revisit the concept.

Grumman tried to turn some modified Bearcats into night fighters, but that didn't work either. There wasn't room on the wing leading edge for a faired-in radome blister outboard of the guns and inboard of the wing fold, so the radar unit had to be carried in an awkward tank under the right wing.

The combination of small wings and asymmetry made the airplane difficult to handle. It was, of course, widely assumed that the U.S. would have to invade Japan, and Bearcat production was about to ramp up to protect the invasion fleets, but before any of that could happen, the atomic bomb put an end to the war on August 15, 1945.

Two civilian Bearcats were built after the type's production run was complete—registered as G-58As, not F8Fs, since they were assembled largely from mix-and-match parts left over from production and thus matched no known Bearcat version. One went to airshow pilot and Gulf Oil PR man Al Williams, who had since the late 1930s flown a series of civilianized fighters he called Gulfhawks. His Bearcat was the Gulfhawk

IV. Williams flew it at airshows demonstrating…well, who knows what? (Imagine Bob Hoover today asking for an F-16 with which to replace his P-51.) After flying it for less than two years, Williams destroyed the Gulfhawk IV when a gear leg collapsed on landing; the airplane sat heavily on its centerline belly tank, and the remaining fuel ignited and torched the aircraft.

The other G-58A Bearcat is invariably described as the "Grumman demonstrator," but in fact Grumman had no need for a sales department airplane. It was actually built to the order of (and paid for by) Grumman VP Roger Wolfe Kahn, the most multitalented aviation exec of his time. Kahn was the son of investment banker Otto Kahn, and he became a widely acclaimed jazz bandleader in the 1930s. He and Otto were the first father and son to both be the subject of *Time* magazine cover stories for entirely different reasons.

Roger Kahn ended up at Grumman, where he achieved far less notoriety but is still known in the aviation maintenance community as the developer of the original tech-rep system whereby complex military devices are today routinely supported by civilian factory technical representatives. Several Grumman pilots used Kahn's Bearcat to deliver crucial parts to F8F squadrons all over the country.

In the spring of 1946, the Navy borrowed an Army Air Forces Lockheed P-80 jet and sent an F8F-1 up to ratrace with it. Both fliers were combat-experienced, but the Bearcat jock couldn't get a shot in edgewise. The P-80 literally ran rings around him, and of course had the speed to engage and disengage at will. As historian Hallion later wrote, "That mock dogfight high over Patuxent River spelled the death of the piston-engine naval fighter. The chief of the Bureau of Aeronautics down to the lowliest ensign in the most obscure fighter squadron realized that the Navy had to develop carrier-based jet fighters in order to stay in the air combat business."

It is sometimes written that "the Bearcat was the equal of early jets," which is nonsense unless you're matching it solely against the Bell P-59 or the pitifully underpowered original McDonnell FH-1 Phantom. After less than a year of operational service, the Bearcat was damaged goods, no longer able to do the job for which it had been designed. It was replaced by Grumman's own F9F-2 Panther and the McDonnell F2H Banshee—simple, primitive, low-powered jets but still far more combat-capable against a new generation of adversaries than America's last-ever piston engine brute.

Still, the Grumman Bearcat wasn't quite finished yet. Its roar would resound on the racing circuit in decades to come.

Former executive editor of Flying *magazine, frequent contributor Stephan Wilkinson writes from Cornwall-on-Hudson, N.Y.*

Further reading: Grumman F8F Bearcat*, by Corwin Meyer and Steve Ginter, and* Racing for the Gold: The Story of Lyle Shelton and the Rare Bear*, by Dell Rourk. Originally published in the May 2010 issue of* Aviation History*.*

Members of the U.S. Navy Blue Angels aerobatic team pose with an F8F-2 Bearcat. The Angels flew the F8F from August of 1946 to July 1949, when it was replaced by the F9F-2 Panther.

IF anyone could use a sturdy shipping container for a model… this is the box in which my Bearcat parts were shipped.
It has a hardwood frame inside the cardboard exterior.
The box measures: 57” x 10” x 22”
FREE to anyone who can use it. Please come and get it!
Call or email me:
Rich Geertson (707) 693-9537 geertson@sbcglobal.net

The year was 1943.
The October 1943 edition of Model Airplane News featured the newest British fighter-bomber the Hawker Typhoon on the cover.
World War Two was raging in Europe and the Pacific.

Monty Welch was just 3 years old…

An ad from the magazine talks about a "Phantom Pilot" for Free Flight models, providing "completely automatic lateral stability"…

Question: ANY IDEA how this worked? Anybody?

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Next Club Meeting: Monday Dec. 9th at 7pm

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