

Flying the



Bent Wing

First Impressions

First impressions are lasting, and hard to change. Upon approaching the FG-1D Corsair at Vintage Wings of Canada, my first impression was one of surprise and healthy intimidation—the aircraft is big and imposing. It sits proudly, with its massive propeller measuring 13 feet 4 inches, 50-degree drooped flaps, and wide-stance landing gear, almost like a 300-pound lineman at the line of scrimmage.

The last aircraft that was so impressive to me was the CF-18 Hornet, and I would later cavort in that aircraft for almost 2,400 hours, and develop a bond similar to what an experienced rider must have with a great horse. When flying, it is a feeling of strapping the aircraft onto your back to work together as one, that the machine is an extension of you, vice strapping in for a ride. With the Corsair, I had some ground to cover before I would feel that way.

There were many other first impressions, however, as I got up close and personal with the Corsair. The inverted gull wing design is unique and striking. It was a clever by-product of numerous engineering decisions that fell like dominos to help determine the final aircraft configuration—keeping the large-diameter propeller clear of the ground, leaving space for the landing gear to retract fully into the wing, making a stout landing gear for car-



Brute

PETER HANDLEY PHOTOS



FG-1D pilot report

BY PAUL KISSMANN

rier operations, minimizing the drag penalty of the wing to fuselage junction, and a great place for intercooler, oil cooler, and supercharger air intake amongst them.

The relatively short, beefy landing gear is mounted well forward under the wing to allow fully internal aft retraction, and with the 2,480-pound dry-weight R-2800-8W 18-cylinder Double Wasp engine anchoring the front end of the aircraft, the forward position of

the main wheels keeps that in excellent balance, while attaining, if anything, a tail-heavy ground configuration.

Other significant first observations included the 6-inch stall strip on the starboard wing leading edge inboard of the gun ports; the large area and high deflection angle flaps; the sliver of a vertical fin and relatively large rudder; an aft-mounted cockpit location adjacent to the trailing edge of the wing; an incredibly long, large, round, forward fuselage

(“hose nose”); and balance tabs fitted to the left aileron and elevators. All of these elements affected the ground or flight handling of the aircraft in significant ways, as we will see shortly.

Welcome Aboard

Like mounting a tall horse, the Corsair boarding process is not the easiest task. A rectangular hole through the starboard flap serves as the first step of this World War II-era climbing wall exercise.



A healthy stretch to almost mid-thigh height allows your right foot to fit comfortably into the flap, while a stretch with the right arm finds a secure handhold above your foot, alongside the fuselage. Next is a hefty heave and grunt that brings your left foot into a half-moon recess up near where your left hip was when you started, and then to complete the four-hold initial grapple, your left hand finds the top of the canopy rail. Whew!

Now you are precariously hanging off the side of the beast with a feeling of “What now?” It’s easiest to fit your right foot next to your left in the half-moon toe-hold area (size 12 shoes need not apply). Now with both hands on the canopy rail, a pants-splitting lunge up with your left leg may allow you to get your foot over the canopy rail, but it is a feat of ridiculous proportions, as the canopy rail started somewhat above your waist level. If your left leg makes it all the way up and over the rail, it is a fairly easy task to get the rest of your body into the cavernous cockpit, by stepping onto the seat and then sliding down with your feet to find the two heel-support rails that lead to the rudder pedals.

A modern-day human-factors engineer would have much to say about getting up and into this beast, with the first and last steps of climbing aboard being the most challenging. I am not sure how folks shorter than 5 feet 10 inches tall ever made it.

Cockpit Layout and Controls

By any standard, the Corsair cockpit is positively spacious for a fighter aircraft. The seat is hung off the back armored wall by two lower hooks and two upper pinned fittings, with the seating position being very upright. Seat height is adjustable vertically through 9 inches’ travel, allowing excellent adaptability for tall or short alike. A seat-pack parachute serves as the bottom cushion, and a four-point webbed strap harness secures the aircraft to the pilot’s back.

Apart from the heel slides that are some 2 feet above the floor (which doubles as the bottom fuselage skin), there is only a great cavern below the pilot. It has become known to me as the “pit



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of despair,” as anything that falls out of your hands or off your lap will end up absolutely irretrievable unless coerced aloft by negative g stunts or diving head first into the cockpit after the next landing for a cockpit cleanup.

The center control stick is the length of a healthy shepherd’s staff, with a very generous stick throw envelope that tests my 75th percentile functional reach for any full-deflection inputs, especially forward stick. This superb lever is anchored to the torque tube for the ailerons and also the elevator control circuit. Predictably, it is a mechanical fully reversible flight control system.

You are directly linked to the control surfaces by metal pushrods and tubes supported along their travel by bell cranks and bulkheads. This makes for excellent pitch and roll control with no significant freeplay and negligible friction, an especially impressive feat given the wing-fold mechanism operates without disconnecting anything in the lateral control circuit and it was all designed with slide rules and pencils on paper.

The rudder pedals are conventional with five independently adjustable fore and aft positions, top-mounted toe brakes, and a looped cable and pulley system to a rudder horn that facilitates rudder control. Once again like the control stick, the rudder pedal travel from stop to stop seems excessive, with your feet ending up either slightly too close or too far away for a chosen pedal position. Those World

War II pilots must have been big lads, as it seems you need to be about 6 feet 2 inches tall to make it all fit right.

Other important controls in the cockpit include the wing lock/unlock and folding actuation levers in the aft left corner behind the pilot’s left hip. Not unlike the much more modern F-18, unlocking the wings extends a small red warning pin out the top of each wing as a caution to the pilot, and the folding process itself is driven hydraulically. Forward of the wing-fold selector are the three-axis trim wheels and the tail wheel lock, which is a critically important control for takeoff and landing.

The engine controls are located ahead of that, exactly where you would want them, by your left hand. There are four controls, including propeller rpm, throttle, mixture, and the secondary supercharger control. All move in a conventional and logical manner apart from the propeller rpm, which is aft-mounted on the throttle quadrant, and moves up and down via a handle, or a vernier wheel for fine adjustment. Down is high rpm and up is lower rpm. More logical may have been up for increased rpm, but as with most of these birds, you get used to it.

Along the left side panel the other important controls are the backup hydraulic hand pump, the landing gear/dive brake selector lever, the backup landing gear extension blow-down bottle, and the landing gear indicator position pins. The magneto switch is hidden from view under the front-left portion of the instrument panel with familiar “Both-Left-Right-Off” positions.



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The instrument panel has all the important round dials you would expect, but scattered in a way that always leaves me searching for what I want. There is no conventional six-pack located centrally, although it could have been organized that way. As it is, the airspeed and altimeter are tucked far away to the left of the panel along with the manifold pressure and engine rpm, well beyond the central six instruments.

The altitude indicator is in the top right, next to the large dial *g* meter, CHT, and engine triple gauge. The right side panel has the cooling control handles, which include the cowl flaps, oil cooler flaps, and intercooler flaps. The labeling encourages incorrect actuation, but the forward to open and aft to close is not illogical and comes fairly naturally once adapted to it.

The most commonly sought-after aft cowl flap handle is distinct in color and length, which is an excellent feature. Equally superb is the hydraulic pressure gauge and the accurate internal fuel gauge, located just forward of the cooling flap handle. Rounding out the right side panel are the switches that make things work—the battery, electrical fuel pump, primer, starter, generator, avionics master, and lighting. This piccolo of side panel switches is played very carefully during the start sequence, which is one of the most carefully managed processes of flying this fire-prone bottom-mounted carburetor engine configuration. The last important control on the aft right

side panel is the tail hook, although not used in our operation; it is fully operational, as are all the other aircraft systems.

Hydraulics

The most complex system on board this vintage aircraft is the surprisingly complex 1,000-psi hydraulic system that runs everywhere in the aircraft like spaghetti over a pasta bowl, and helps actuate almost everything apart from the primary flight controls. This includes all the cooling flaps, wing flaps, wing fold and locking, .50-caliber gun charging, landing gear and dive brake operation, arresting hook, and center-line drop tank valve operation. It's incredibly complex for that era, and also something that must have created the most maintenance headaches.

Test Aircraft

Our immaculate FG-1D Corsair was restored by John Lane and his team at Airpower Unlimited, which earned them an EAA Oshkosh Golden Wrench and Grand Champion Warbird award in 2003. A tribute to our Vintage Wings staff saw the aircraft rewarded again in 2010 as a returning ex-Grand Champion warbird. As flown, typically our aircraft weighs near 11,500 pounds with full fuel (237 U.S. gallons) and a pilot and parachute on board. Up to 23 U.S. gallons of oil are included, although a nominal 17 U.S. gallons is a normal load that is less likely to get blown out under normal operations. The CG is normally near

the aft limit of 34 percent MAC, with anything in the cockpit or storage area behind the cockpit pushing it aft to the limit. Luckily the gun ammo bays are excellent storage locations in the neutral CG part of the wing, and they carry rows of plastic oil bottles perfectly, four to eight of those per hour are needed.

Cockpit Visibility

As with most big warbirds of World War II, the forward cockpit visibility on deck is poor. You can hide a B-737 in front of a Corsair on the taxiway. Luckily the gull wing provides two great views above the dip to see down and forward at the 10 and 2 o'clock positions. Weaving the aircraft during taxi is typical and allows the pilot to clear the front of the aircraft effectively. A combination of good takeoff-handling characteristics and wheel landings minimizes the impact of the poor visibility while on deck. Taxiing this aircraft on a carrier must have been a terrifying ordeal, were it not for excellent ground handlers.

In flight, the aircraft flies almost slightly nose low, and the high perch of the pilot coupled with the slightly bulging bubble canopy offers good visibility in most quadrants apart from aft at the 5 to 7 o'clock positions; forward and down due to the wing, which sits ahead and below the pilot; and of course forward and down due to the "hose nose." Spotting bogies from on high in the 30,000-foot regime must have been interesting with so much real estate forward and down blocked by wings and the nose.

Engine Start

Before the aircraft gets rolling into the takeoff, a successful (fire-free) engine start has to be accomplished. I have a theory that the Corsair does not have any keys, as getting it started is a rite of passage Indiana Jones would be proud to master (with the updraft carburetor configuration).

Prior to the walk-around, the engine gets pre-oiled for two minutes, and then the sharp-edged propeller is pulled through at least six blades to get



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both your and the aircraft's blood flowing and distributed. After sitting a few weeks, even with an oil tank shutoff valve, the bottom cylinders will fill with oil, and draining them properly, ensuring no hydraulic lock is present, are critical to safe engine start and long life.

The three key elements to a great engine start on the Corsair are initial throttle position, adequate priming, and the timing and pace of mixture lever movement from idle cutoff. The throttle position for start is marked on the inner fuselage/cockpit side wall with a red arrow. Even more precisely, I use the letters of the word "THROTTLE" that are etched along the top of the throttle quadrant, with the leading edge of the throttle handle placed at the bottom of the "L."

The engine gets turned over nine blades on the electric starter, and eight seconds of prime are introduced with the help of the electric fuel pump and selection of the primer toggle switch. It is at this point that you run out of appendages, and are happy the aircraft is so tail-heavy that the start does not even remotely encourage the aircraft to nose-over as a Spitfire would.

The pilot's left hand is on the mixture lever, which starts at idle cutoff; the right hand is engaged with the side-by-side starter and primer toggles. Due to a lack of a parking brake,

the pilot's feet are on the toe-brakes, leaving the stick to flop somewhere full nose down, due to the mass balance characteristics of the elevator. It is very unnatural for a taildragger pilot to leave the stick unattended during start, but that is the best choice.

In the back of my mind I hear an old grizzled instructor ranting at me for not holding either the control stick or throttle on start. With the ignition set to BOTH, the engine cranking begins anew, with the Zen requirement of the pilot and the aircraft now needing to be in full harmony.

The mixture is gently coaxed forward as the engine starts to fire—not too quick or too far. If nothing happens for about 10 seconds, one-second increments of additional prime are introduced. Normally the engine will start to belch and smoke with a laborious acceleration toward idle; as this starts the mixture is moved forward halfway toward Auto Lean, and then it depends on how well the engine is swallowing the extra fuel.

If it continues accelerating, the mixture slides slowly and steadily up to Auto Lean, which will normally reward the pilot with a bug huff of gray smoke and a smoothly accelerating engine. Too slow on the mixture or a poor initial throttle setting and a loud backfire is grunted from the big radial.

Too quick on the fuel and it bogs down to nothing, and you start the mixture dance again while keeping it cranking over. Most importantly, if a stack fire should start, it is critical to keep cranking the engine, the fuel selector goes off, the fuel pump is shut off, and idle cutoff is selected on the mixture.

The engine cranking helps swallow the flames back inside the engine where they belong, and cutting off all fuel helps stop feeding the external fire. If you are rewarded with a nice start, getting it moving comes in short order, as there is little to do in the cockpit apart from warm up the engine and raise the flaps.

Ground Handling

One weakness of the aircraft design is the wheel brake setup. The internal disk stack needs to be re-torqued roughly every 10 to 12 landings, and is fairly quick to fade or require more attention if used anything more than occasionally.

Every attempt is made to minimize brake inputs while taxiing, but with the tail wheel unlocked and the necessity for S-turns to see forward, it is rare that the aircraft is headed in any one direction for long. I expect the original design goal of carrier operations left out the need for strong and long endurance brakes. Worse yet is that the brakes are rather sudden

and difficult to anticipate upon initial brake application, something that makes the landing roll-out that much more interesting.

The aircraft is otherwise very easy to taxi with no concerns of tipping over in any direction, due to the heavy tail and wide stance. Luckily not much is required to get rolling or to keep moving, which makes waiting for 40°C before adding much power unnecessary for initial forward motion of the aircraft.

The run-up is rather conventional, and the engine is smooth and delightful in its seemingly effortless production of power. Thirty inches manifold pressure produces 2000-2200 rpm and, with the mixture in auto-rich, provides the baseline setting for magneto checks and exercising the prop governor.

Cylinder head temperatures are normally easy to keep well below 230°C with full open cowl flaps during ground operations. Once in position on the runway, the cowl flaps are reset to half-open to minimize buffeting on the tail as the aircraft accelerates; the intercooler flap is closed, and the oil coolers are set to half-open.

The last few important details prior to takeoff are locking the tail wheel when aligned on the runway, checking that the flaps are up, the electric fuel pump is on, and the trims are set to 6 degrees right for both the lateral trim and the rudder and near neutral for the pitch trim. As the power comes up, the 6-degree trim settings help counteract the tendency to roll left and yaw left due to the power and propeller effects on the aircraft. With around 2,000 hp available for takeoff, it needs to be harnessed carefully.

Takeoff

Surprisingly, the takeoff in the Corsair is literally the most benign and easy of any taildragger that I have flown. Part of this ease of operation is attributable to careful power application, but it is very stable during takeoff. The big propeller throws enormous amounts of air aft, with power application making the rudder and locked tail wheel superb directional control devices.

I normally apply at least 30 inches'

manifold pressure before the brakes are released and the takeoff roll begins, to help ensure the rudder is effective right away. A quick look at the engine instruments and a continuous slow two-potato count to full power completes the initial inputs, with the engine emitting a deep distinctive growl.

With a manifold pressure limit of 54 inches, I aim for the high 40s on every takeoff. If something is to go wrong, the time to find out is on deck, and that much power is never called for again during any sortie I have flown. A neutral to slightly aft stick position allows the tail to float up very slightly just prior to takeoff. Not forcing the tail up keeps the left yaw tendency with attitude change to a minimum, but leaves the view out front blind for the 2,000 feet needed for the takeoff roll.

Luckily the runway edge provides lateral guidance over the gull wing, and only moderate right pedal inputs are needed to keep the aircraft straight throughout. I have yet to stare at the airspeed indicator on takeoff; it is a pure feel event with excellent feedback to the pilot of the lift being generated and the eagerness of the aircraft to fly. The aircraft just powers gracefully into the air full of excellent control in all axes immediately on liftoff.

Once enough runway has vanished behind the aircraft to make any straight-ahead landing on concrete impossible, the gear is retracted and the trimming begins. The right wing down lateral trim used on takeoff is immediately too much post-takeoff as the airflow takes hold. The landing gear, which doubles as dive brakes, produces a dangerous nose-up pitching moment upon retraction. At the typical 85-95 knots in this phase of flight, any inattention to pitch attitude and thus airspeed can be disastrous.

Two solid nose-down trim inputs, and then two or three cranks to the left on the lateral trim and things are momentarily in balance. Thereafter it is the rudder trim that is most commonly used, acting almost like a fourth flight control. The initial climb is established near 130 knots, and the

power is brought back to typical aerobatic power of 41 inches and 2400 rpm with more than 2,000 fpm climb rate easily sustained.

There is little need to fiddle with the cooling flaps apart from the cowl. The intercooler flap stays closed and the oil coolers can normally be fully closed once established in cruise or even during aerobatics or demo flying on any day that is not excessively hot. The cowl flaps are normally between half-open and fully closed, in direct relation to power setting and forward speed, but don't need too much attention.

Cruising Flight

Normal cruising flight for best range and endurance is below 12,500 feet, although the aircraft can work well into the 30,000-foot altitude band. Without wind or weather factors, cruising at 7,500-8,500 feet puts that aircraft in the middle of its most economical cruise envelope. Normal power settings of 32-34 inches and 2200 rpm yield near 220 knots true airspeed with 65 U.S. gallons per hour fuel burn in Auto Lean—the normal in-flight mixture position for all but takeoff and landing. Any lower setting of engine rpm produces an annoying vibration all the way down to around 1700 rpm, and with the propeller turning at half the engine speed, you can almost count the blades going by.

I have chosen the higher rpm as a habit, and it has proven to be very economical, for a Corsair. For flight-planning purposes, I use 100 gallons of fuel burn for the first hour and then 65 gallons per hour thereafter. That produces a three-hour flight potential to dry tanks, with two hours and 400 nm being a very comfortable maximum range target. With optional external droppable fuel tanks, the Corsair had the potential to carry 747 U.S. gallons of fuel and thus reach far and wide in the Pacific theater.

Handling Qualities

The aircraft spiral stability is at best neutral in the cruise configuration; any disturbance or mild out-of-trim condition and the aircraft will happily roll



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off to one side or another. Not much time can be spent with the stick left free, whether folding maps or arranging other items in the cockpit, regardless of how well you have trimmed, as something will tip the wings and off you go. It is something to be aware of, and good cockpit organization pre-flight is essential.

Any change in airspeed, power, or configuration will have the pilot reaching for the rudder trim wheel. The tiny vertical stabilizer does little to keep the aircraft flying straight; rather the rudder trim with the large rudder and pilot foot-pressure do most of this work.

Aggravating the aircraft directionally through rudder inputs or atmospheric turbulence yields a lightly to moderately damped yaw response—the aircraft likes to Dutch-roll back and forth, with little real estate at the back to stop it once started. In cruising flight this is certainly annoying, but is best ignored as the pilot is not quick or patient enough to suppress it.

Thankfully the lateral stability is not overly strong, so the amount of roll generated by sideslip due to pedal inputs or turbulence is not that significant compared to yaw. On a strafing run this is actually an excellent characteristic, as it is possible to correct lateral aiming errors or “spread the lead around” by tapping the rudder pedals left and right. The rudder pedal pressures needed to correct any slipping flight, or generate it on approach or landing, are not very high given the size of the rudder. In the normal regime of aerobatic flight of 260 knots or below, the rudder forces are reasonable and well-harmonized with the pitch and roll controls.

Lateral Controls

The most delightful control response is lateral, something Chance Vought fought hard to get right in the design process and succeeded. The left aileron mounted balance tab, long stick, and the light fabric-covered surfaces are easy to move around through-

out the normal flight envelope.

Full-deflection aileron rolls at 150-220 knots are easy to accomplish with one hand on the stick, due to the relatively low lateral control forces. The roughly 100-degrees-per-second full-deflection rolls can be stopped predictably and precisely during an aerobatic demonstration, or when controlling bank angle on a gun attack, or other aggressive rolling maneuvers that demand accurate and quick bank angle changes.

Coordinating rudder is essential during normal turn entry and exit, although I minimize this application during lofted point rolls, as unloading the aircraft to light positive *g* prior to full lateral stick application produces very little adverse yaw, and as long as having the nose fall slowly during the roll is your goal, having only light coordinating pressure produces an excellent slow or fast aileron roll with very little sideslip.

A good guide for rolls at 200 knots is to loft the nose so that the leading edge of the wing is as far below the ho-

hizon as the top of the cowling is above, then unload to about 0.3g and initiate a step roll input on the stick. Some stick snatching during quick rolls is apparent at full deflection, as the ailerons are working near their limit.

During less aggressive, day-to-day turning maneuvers, the aircraft is literally a “two-fingers on the stick” type machine, and trimming laterally is fairly rare, apart from post-takeoff, which is unusual for World War II-era aircraft, where lateral trim is often in strong demand and control forces are immense. What a great design.

Pitch Control

Longitudinally the aircraft is more interesting. Speed changes through an aerobic demonstration spanning 70-260 knots requires some minor pitch trim adjustment, more for comfort than necessity. A quick nose-down input or two during a long dive acceleration keeps the fairly shallow force gradient from becoming a distraction. The pitch trim cues are strong enough in landing and approach configuration, however, to make sure that the pilot notices out-of-trim conditions and is able to maintain speed accurately during the final phases of flight.

With our aft CG configuration and the inherent maneuver stability cues of the Corsair, the aft stick force generated during high *g* turns and dive recoveries is not as strong as they should be. It is common to overshoot a desired *g* target during a moderately aggressive pull, due to the low (and reducing) force gradient with increased *g*.

In a 4*g* vertical pull into a loop at 230 knots, the aft stick forces peak at an estimated 10-15 pounds. Compensating by pulling less suddenly helps, but I can't imagine such discipline when faced with an angry swarm of Zeros. It would be interesting to fly a Corsair with a more forward CG to determine the influence of CG position of the longitudinal pitch forces in turning flight. As it stands with our aircraft I would call this one of the few detractors of this very capable multi-roll combat aircraft.

The pitch response for finer inputs,

however, is excellent. This allows the aircraft to be pointed in pitch with great predictability and without any tendency to bobble around a target. On a dive attack or tracking an opponent's aircraft, predictable short period (fine) pitch response is very important, and the Corsair would have been an excellent platform in this regard. It is most noted in peace time during formation flight where the low-friction, near-zero free play (slop), and excellent short period characteristics of the pitch controls conspire perfectly to allow predictable and easy formation flight in pitch.

Stalls

No conversation on the Corsair is complete without addressing stall characteristics. The early models exhibited a nasty left-wing drop at the stall, which was responsible in part for the aircraft being initially land based vice carrier borne with the U.S. forces.

The 6-inch stall strip that is fitted to later-model Corsairs made an immense difference, helping trip the stall on the right wing to match that of the left. In both the cruise and landing configurations with low- to mid-power settings the aircraft stalls from near level flight with only some minor warning of rumbling felt in the seat of your pants, and progresses to just a pitch break and minor wing drop of less than 20 degrees.

Turning stalls in the cruise configuration generate a somewhat violent hammering pitch response with little noticeable wing drop, and recovery is immediate on the release of the aft stick input. Even flying aggressive slow-speed looping maneuvers leads to only a minor pitch rumble if not enough back-pressure is released over the top of the loop. A small 6-inch strip made a huge difference, and was a game-changer for bringing the Corsair onboard U.S. ships in the Pacific theater. In its current configuration, the stall characteristics, while not providing strong warning cues, are very good.

Landing

Returning to the landing pattern is the beginning of the most daunting task in the Corsair, but it comes well after the

wheels are on deck. Descent necessitates some forethought, as it is not uncommon to fly 250 knots indicated airspeed in a shallow descent, with power on, and all cooling flaps closed to reduce the cooling rate for the engine. Establishing a downwind at 1,000 feet above ground via a low break or overhead break and 2*g* turn is easy to manage, as the aircraft will scrub 30-50 knots easily in a turn with reduced power.

The landing gear, which doubles as a dive brake when extended without the tail wheel, is cleared to be extended out to 380 knots. In the interest of longevity, however, it is normally lowered on downwind at around 160-180 knots with “square power” of 22 inches and 2200 rpm.

After the gear pins confirm three down, the speed is normally bled back to 140-150 knots and 20 degrees flap are selected. A normal landing for almost any circumstance other than a landing at a field less than 4,000 feet long is easily accomplished with 30 degrees of flap, which are lowered as the final descending 180-degree fighter final turn is commenced and speed bleeds below 130 knots.

A final turn speed of 95-100 knots is very comfortable with flap-30 and 90-95 knots with flap-50 for a short-field landing. This is still a solid 10 knots faster than what the courageous pilots flew coming aboard the carriers. The engine rpm is increased to 2400-2500 rpm to leave options for an overshoot, and a continuous curving approach is flown to the numbers.

The forgiving long oleo landing gear gives a wheel height similar to a B-737, so a smooth and early flare is necessary to avoid early contact. The oleos make wheel-landing the aircraft like stepping onto a feather bed that's several feet deep. As the aircraft's weight settles onto the wheels, it typically wallows its way down to compress the oleos, and any bank angle or crosswind requires almost double the lateral stick input that you expect.

Surprisingly happy in a 15- to 20-knot crosswind, a wing-low, top-rudder, single-wheel landing is my preferred technique with whatever degree of lat-

eral stick is needed to keep that gull wing from catching too much air under it. In all landings I prefer to use increasing amounts of forward stick to keep the tail up during the landing roll until it is no longer possible. This keeps good airflow over the tail and rudder as long as possible as the tail simply quits providing any help once the three-point attitude is finally established.

The large flat-pitch prop at idle power is also destabilizing its yaw, unlike the positive effect it has when at full power. I have both lifted the flaps just prior to lowering the tail and also left them alone for retraction once stopped. Either technique works well, and neither seems significantly better than the other for directional control on roll-out. If choosing to lift the flaps with the tail high, the tail will drop slightly with retraction and you have to be careful to not input any unintentional left pedal while reaching for the flap selector. As the tail is lowered the prop effects give a slight right yaw that needs to be

checked with left rudder—even at idle the big prop has strong inertia effects.

The only daunting aspect of the Corsair landing begins once the tail is down. The brakes are unpredictable and underpowered, and it seems to be a constant lottery as to which brake will grab first, regardless of how gently and symmetrically the toe brakes are applied.

The asymmetric application gives a small initial lurch either left or right that must be countered quickly with the opposite brake, and then steady modulation of both brings things back under full control. If adequate runway is available (more than 3,500 feet), the aircraft can be kept fairly straight under ideal conditions with aggressive inputs of large amounts of rudder, and brake application can be delayed until quite late in the landing roll, but this is a rare occurrence, as crosswinds and tail lowering to the runway usually start more yaw than can be countered with just rudder inputs.

Once slowed appropriately, the tail wheel gets unlocked to allow sharper

turns and the cooling flaps are fully opened to keep temperatures under control. In anything but auto rich mixture setting, the engine will pop and bark on the ground at idle, so it is best to provide the richest and coolest mixture input possible.

Engine shutdown is conventional and is normally accompanied by a big smile as I give thanks to the aviation gods for the privilege of flying this beauty. With very few detracting aspects, fantastic power, performance and control harmony, it is little wonder that the Corsair was such a successful fighter during World War II and beyond to the 1960s. It is likely amongst a handful of the best few fighters of its era, alongside aircraft such as the P-51, Fw 190, Hellcat, and Spitfire.

Post-flight I always have kind words for our aircraft, and a loving pat on the nose to thank it for running smoothly once again. It is at this point that we break the bond between pilot and aircraft, like sliding the saddle off a horse, until next time.



WARBIRD TOONS

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