

The AD-5W is painted in the livery of Marine Corps squadron VMA-332, "Polkadots." The squadron transitioned from Corsairs to Skyraiders in December 1953, at the end of the Korean hostilities. They remained in Skyraiders until 1957 when they went to the A-4D Skyhawk. Large MR squadron markings on the tail was also the callsign "Mike Romeo."



David Grantham, left, with his father, Farley, who taught him how to fly and how to be an A&P. Note the AD-5W's cowls open and ready for inspection.

During his 47-year career at Douglas Aircraft, Ed Heinemann designed more than 20 aircraft, including the A-20 Havoc, A-26 Invader, A-4 Skyhawk, and the A-1 Skyraider. Not bad for a guy who never finished

high school. A little too late to see action in World War II, the massive Skyraider, which Heinemann and two of his engineers designed overnight in a Washington, D.C., hotel room, entered service with the Navy in late 1946. Originally intended as a replacement for the SBD Daunt-

“In a warbird with this pedigree, a bit of fantasizing is unavoidable.”

SOLOING THE AD-5W Skyraider

It took 13 years to fulfill the dream,
and it was worth the wait

BY DAVID GRANTHAM



Ground attack AD-4 Skyraider on the line at Oskhosh. Grantham flew an airborne, early warning variant for this article, and is rated to fly the single seat variants as well.

David Morss in Jerry Yagen's AD-4 at Oshkosh 2005. This photo illustrates the climb required to access the cockpit. Note the hand/foot-holds leading up the fuselage.



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less, the production run eventually yielded 3,180 aircraft and 21 different versions. With a service life of nearly 25 years, it would see combat service longer than any other single-engine aircraft in U.S. Navy history.

Bureau No. 135178, an AD-5W, was accepted by the Naval Bureau of Aeronautics representative at El Segundo, California, on June 30, 1955. During its 16-year career it flew a little less than 2,300 hours, with the majority of these being in the airborne early warning (AEW) role. Among the very last Skyraiders put out to pasture by the Navy, 135178 was officially retired on June 17, 1971. It became N62466 and passed through several civilian owners until Patrick F. Taylor, a New Orleans oilman and philanthropist, added the Skyraider to his aerial menagerie in 1989. Taylor, who passed away in late 2004, passionately believed in keeping his

aircraft in the air as much as possible. After many years of patient determination, persistence, preparation, and holding onto a dream, I finally managed to find myself in the left seat.

Thirteen years before, just after Taylor purchased the Skyraider, his crew flew it up to our family-owned FBO. As it turned onto the taxiway after a smooth landing, the outer wings folded upward and the huge propeller looked as if it was turning slow enough that one could count the blades. The barking engine came to a stop on our ramp. The crew unbuckled and made its way over the cockpit sides, carefully easing down the oil-soaked wing-walk. After a brief visit they headed back for the Skyraider.

With a soulfully deep envy I watched as the crew climbed up and strapped in, preparing to depart south. Shortly thereafter I

heard the whine of the fuel-boost pump and knew that in just a moment I would be completely absorbed in the sensory buffet of the 18-cylinder Wright Cyclone coming to life. The entire airframe literally rocked as the Aeroproducts propeller slowly turned over, followed by a few umbrella-sized puffs of white smoke, a loud bark, more smoke, and then it caught. Raw, unharnessed horsepower barely bridled at low idle.

Until then I really had no idea just how big these airplanes actually were. The wings span more than 50 feet, the top blade of the prop reaches nearly 16 feet in the air, and the engine alone weighs more than 2,800 pounds. Looking at the boxy rectangular-shaped fuselage, it was obvious that sleek, elegant, and low drag were not invited to the design party. It was first and always a close-in attack aircraft

conceived to simply put as much lethality as possible on a narrowly defined target.

Being used in the "Sandy" search-and-rescue missions during the Vietnam War often meant these targets were only a few meters from the downed aircrew being rescued. The slow, steady, and deadly accurate Skyraider simply had no equal in this role. Lumbering along at barely 150 knots, with its 15 wing stations carrying up to 8,000 pounds of bombs, rockets, or napalm, it could loiter for hours, waiting to be called in on a target. There is even one story from Vietnam of a pilot actually fastening a kitchen sink to his ordinance just so that old adage couldn't be used anymore.

The entire bottom third of the instrument panel is devoted to ordinance delivery. There are more than a dozen toggle switches and control selectors—enough options, I'm told,

to make about 100 separate passes. I had absolutely no idea how I would go about doing it, but one day I fully intended to fly that airplane.

Thirteen years later, one day was right now. After passing a checkride and receiving my letter of authorization in all models of the Skyraider, I was set to go.

With the paperwork fresh in hand, I saddled up for my first solo flight. The AD-5W has two seats up front with a single set of controls on the left side. In back, there are four individual seats under the bright blue rear canopies. Unlike some models, there are no seats in the aft fuselage. This flight would be the realization of a 13-year quest, and I was not about to rush through it. Methodically, and keeping aware of each moment, I began the pre-flight, ensuring that the 382-gallon main fuel tank was topped off and the 38.5-gallon oil tank was ade-

quately filled. You haven't been low on oil until you've been 13 gallons low. After ensuring everything was in good shape, I buckled in while the engine pre-oiler was running.

The first defining moment was at hand—the engine start. Chocks in place, fireguard at the ready, take a deep breath—okay, here we go. Starter button depress, count 16 blades, magnetos to both, a couple of seconds on the electric primer and the engine burst into life. Immediately, the cockpit was filled with thick gray smoke as grape-sized oil droplets streaked down the fuselage. After about 10 seconds it was running smoothly on the primer, the smoke had cleared, and I advanced the mixture from idle cutoff to rich. The aroma of oil smoke, fuel, and sweat may be an obnoxious odor to most, but I take it in greedily.

I completed the after-start check-

Skyraider R-3350 comes to life.



list and was about to signal for the chocks to be removed when I glanced down at the hydraulic pressure gauge. It read zero. Not good, since almost everything on the airplane is powered by the 3,000-psi system. I quickly stomped on the normally stiff brakes that, according to emergency procedures, would now require three times the pedal pressure if this thing jumped the chocks. The effort demanded I slide my heels up to the top of the rudder pedals and lock my knees. From the ground, Adam Goldberg, Taylor's director of aviation, saw what had happened and signaled me to unfold the wings while activating the auxiliary electric hydraulic pump. Slowly the wings unfolded and the engine-driven hydraulic pump began to force pressure into the system and purge itself. Finally, after three full wing cycles, everything was in the green. My thighs were burning, and under my helmet the sweat was running into my eyes. I headed toward the runway.

Surprisingly, I found that with even a gentle crosswind the massive slab-sided fuselage made like an errant child and had to be constantly redirected down the proper path. This lengthy taxi/wrestling match had left my flight suit soaked through and my toes numb from standing on the breaks, and I wasn't even in the air yet.

I reached the run-up area and pointed the nose into the wind. This is quite important, as the engine will tend to overheat if ground ops are prolonged. The run-up is quite a physical task and can be somewhat intimidating. Throughout the pilot's operational handbook (POH) on nearly every page, or so it seems, is the directive: DO NOT USE A MANIFOLD PRESSURE SETTING HIGHER THAN FIELD BAROMETRIC PRESSURE DURING RUN-UP OR A NOSE OVER WILL OCCUR. It notes that the tail strut will extend a "few" inches and the nose will ease down during the run-up. This is normal. But precisely how much more than

field barometric pressure would result in the prop morphing into a turning plow? Other flight manuals for the Skyraider caution that nose over may occur with *less* than field barometric pressure. Very comforting.

So began the match. Canopy remained open, legs locked on the brakes, right hand hauling back on the stick, power up to exactly 30.00 inches manifold pressure. DON'T OVERSHOOT! Prop remained within limits at 2,300 rpm. The entire airframe was literally bucking and jumping, the engine roaring. The tornadic wind noise broke the intercom squelch, adding to the cacophony in my ears. Focus on the task at hand. Yes, the tail just came up a little. Please God, let it be only a "few" inches, because I don't have a clue with this Battle of Armageddon, between noise and wind and vibration raging about me.

I carefully snaked my left arm over and forward of the throttle, careful not to bump it forward, then went under the landing gear



Author David Grantham at the controls of the AD-5W. Here southern Louisiana looks like the Mekong Delta from the cockpit of the Skyraider.

handle and, with the last inch of fingertips, performed a mag check. Fifteen seconds on each ensured both were well within the 75-rpm drop limit, and I then cycled the prop a couple of times.

While all this was going on, I was attempting to maintain situational awareness outside the cockpit, as it would be considered bad form to roll forward and slice up a Piper Cherokee. The high-power engine checks were now mercifully complete, and I throttled the engine smoothly back to idle. It was also considered bad form to unload the 1965 Navy-overhauled powerplant too quickly and have a counterweight go through the side of the crankcase. I noticed the cylinder head temperature climbing into the yellow. Time to get airborne.

With the engine chugging comfortably at 700 rpm I took a quick breather, wiped the sweat from my face, and let most of the feeling return to my toes. I rolled onto the runway—tail wheel locked, fuel boost pump on, supercharger low, cowl flaps open, oil cooler auto, inverter on number one, trims set, wings down and locked, wing locking pins out of view, rear cockpit canopies closed, front canopies opened, stick back, shoulder harness locked, dream intact. With

100LL fuel I'd be looking for 48 inches manifold pressure and 2,700 rpm. I knew I belonged here and felt humbly confident.

The engine didn't scream or rumble and it certainly didn't purr. It crackled just like a top fuel dragster. With both left and right canopies back for takeoff, it was the ultimate in round-engine virtual reality, minus the virtual part. I overwhelmingly heard it, smelled it, and felt it. I had read about it, talked to others, and spent 13 years trying to visualize what it would be like. But it was not until I was there, within the sensation, truly on the inside of the experience, that I realized there is no substitute for reality.

As I began the takeoff, roll engine response was instantaneous and the power came on right away! That's quite remarkable when you consider the thousands of moving parts, two rows of nine cylinders adding up to 3,350 cubic inches and 2,700 horsepower. As my left hand went forward so did my right leg. This in order to counteract the massive torque of the four-blade, 13-1/2-foot propeller, which is the largest ever placed on a single-engine aircraft. At 18,000 pounds, the Skyraider is 7,000 pounds below gross weight and acceleration is very strong. Rudder control is im-

mediate and responsive. I kept the stick back, all the while reminding myself that with the aircraft in a level attitude there is only 6 inches of clearance between the prop tip and ground.

A very quick glance at the engine gauges ensured that all was well. At about 65 knots I eased in a little forward stick to get the tail up, but not *too* far up. Taking some right aileron out for the quartering left crosswind, I concentrated on tracking down the runway centerline. The noise was deafening, as it should be. Gentle back pressure at 90 knots and we were airborne. I brought the gear up as the runway passed behind, and moved the canopy control handles forward to the closed position.

Accelerating through 130 knots, I kept the ball centered using the electric control knob just aft of the throttle. Being light, I opted for a low setting of 40 inches and 2,400 rpm, resulting in a 2,000-foot-per-minute climb at 160 knots. As the altimeter passed through 1,000 feet, I turned off the fuel-boost pump, verified good pressure from the engine-driven fuel pump, and mentally noted we were burning about 300 gallons per hour. The stick-mounted coolie hat made easy work of elevator and aileron trim. Unlike most piston-powered aircraft, the entire trailing edge of the horizontal stabilizer was displaced vertically in response to elevator trim inputs.

Leveling off at 5,500 feet, I set cruise power to 29 inches/1,900 rpm, moved the mixture to auto-lean, and eased in the cowl flaps, ever mindful of the cylinder head temperatures. The lack of vibration and absolute smoothness of the engine was unbelievable. I reached down and moved the shoulder harness control out of the lock position, allowing me to shift around to a more comfortable position. The electrically operated seat was already in its lowest position. Reaching up to adjust the fresh-air vent, I caught a glimpse of myself in one of the aft-facing mirrors. For a de-

tached second I believed I was looking at a picture in another old flying magazine. But I wasn't. It was me, and I well realized it—my contentment rewarding me.

I rolled briskly into a 60-degree bank, the hydraulically boosted ailerons keeping stick forces light as I watched vapor trails stream off the wingtips. I quickly reversed back to the left, letting the nose drop just below the horizon. When the airspeed built to 180 knots, I pulled up, aiming at a large cumulus cloud, and slow-rolled about it. Quite satisfying!

Reversing directions again, I pulled up high, rolled right to the inverted, and let the nose slowly fall through, all the while keeping positive g on the airframe. As Louisiana swamp began to fill the windshield, I continued the roll and kept the nose pointed earthward. When the airspeed wound past 200 knots, I gently pulled up into a big lazy barrel roll to the left. Yes!

The aircraft's response to control input is just right. It doesn't display a heavy feel nor, can it be called nimble. Of course, with an all-up gross weight of 25,000 pounds, I imagined it would be quite a handful rolling in on a target. I decided to explore the slow flight envelope and stall series. In the clean configuration and power at 15 inches manifold pressure, there's not much warning as the nose falls through at about 75 knots indicated. Recovery is very quick with little tendency to fall off on a wing. In the landing configuration, things are even gentler as the wing quits flying at about 70 knots.

Enough slow flight—let's see what she'll do headed earthward. The POH calls for an entry speed of 295 knots for a loop. Power up to climb setting and here we go. I pitched up and rolled almost to the inverted, and let the nose fall through and wait for the 295 knots. And wait and wait. I suppose that thick wing doesn't like picking up speed very quickly. Finally we got there and I pulled about a 4-g entry. Having never done aerobat-

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ics in anything this heavy, I was caught off guard at the sheer size of the loop. I didn't look at the altimeter going over the top, but we must have used at least 2,000 feet, maybe more. As we got to the inverted I got a little light as a pencil went floating by. I avoided the temptation to pull a little harder, wondering what kind of wild torque-induced snap roll/spin combination would happen if I let it get away from me. Coming down the back side I eased off the right rudder and power as speed increased. Not too bad for the first time.

Looking around the big, roomy cockpit, I took a moment and assured myself this flight was really happening. It was almost surreal. I imagined the swamps and rivers of south Louisiana looked a little like the Mekong Delta. I picked out a remote river intersection and planned my ordinance delivery run. It would begin with a 45-degree dive angle up to a Vne of 330 knots. To ensure a good napalm spread, I'd release at about 1,200 feet, followed by jinking maneuvers as I egressed to the east on the deck. On second thought, since I was over a wildlife refuge, I'd stay at about 3,000 feet and enjoy the view from a rare vantage point for a while. In a warbird with this pedigree, a bit of fantasiz-

ing is unavoidable.

As I turned south I began to mentally prepare for landing. As mentioned, a characteristic of the Skyraider's high-lift wing is its reluctance to gain airspeed, which makes slowing to flap speed of 130 knots easy. Approaching midfield, left downwind, I set the flaps at half and opened both canopies. Excellent. Conveniently stenciled on the instrument panel was the landing checklist: Fuel-boost pump on, mixture rich, tail wheel locked, 120 IAS. Three down and locked. Turning base, power is reduced to 20 inches and full flaps lowered. After one last shifting in my seat, I moved the shoulder harness control from inertia to lock. Airspeed slowing to 105 knots. Solid as a rock.

On short final I ran the prop up to 2,600 rpm. In the event of a botched landing, this ensured I'd be able to smoothly and quickly go to 48 inches manifold pressure without fear of an embarrassing uncontrollable torque roll into the ground. That would be considered the ultimate in bad form.

Slowing to 95 knots over the fence, I pulled the power back to idle and set up for a tail wheel low or three-point landing. Mind that left crosswind. There's the touchdown—not bad. Fly the tail to the runway. Stick all the way back. Stay on the centerline. Gently on the brakes. Slowing through about 35 knots, the billboard-sized fuselage caught the crosswind and the rudder dance began. It was busy but manageable. At just above a walk, I unlocked the tail wheel and exited the runway. Boost pump off, flaps up, cowl flaps open, dark helmet visor up. I taxied slowly by the airport restaurant, feigning cool indifference as I folded the wings. I hoped somebody I know saw me. Probably not.

Adam was ready with the chocks as I pulled up in front of the large Taylor hangar. Ran up to 1,000 rpm for a minute to scavenge the oil and let the cylinder head temps cool. Mixture, mags, and master. Yes, I really did it. ✈

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