

TRAVELING COMPANION

Another build-it-yourself gem from the friendly folks at Wag-Aero

BY MARK M. LACAGNINA

For nearly a year and a half after World War II, the lightplane industry enjoyed an unprecedented boom. Aircraft companies could not produce airplanes quickly enough to satisfy the demands of flying schools flooded with veterans seeking to cash in on the G.I. Bill.

As new aircraft orders continued to pile up on their desks, many in the general aviation industry felt confident the boom would last. Things were looking good, very good. But the crystal palace of promise was resting on very shaky ground. Few in the industry realized that many of the flying schools were in the practice of placing their aircraft orders with several companies at the same time. The schools then would accept deliveries only from the first companies that were able to fill their orders. This made the market appear much bigger than it actually was.

The War Department certainly did not help matters when it started to dump surplus military aircraft on the civilian market. In number, the surplus warbirds roughly matched the general aviation fleet. The chance to buy a slightly used P-51 or SNJ for the price of a brand new J-3 Cub or Cessna 120 must have been irresistible.

In any event, the market became saturated. The flying schools had all the airplanes they needed. In the spring of 1947, the boom was over, and the crunch began. It hit the industry hard: About 30 companies went under.

Piper Aircraft was one of the hardest hit. The company had been turning out about 600 Super Cruisers alone each month; and it still was not satisfying its orders. When the crunch came, however, Piper found itself in a swamp. And the crocodiles were snapping. The company built up a huge inventory of new airplanes that nobody seemed to want anymore. Raw materials to build more also piled up, untouched. Each day, Piper sank deeper into debt.

Piper's situation was grim, indeed, when a New York bank sent a tough representative out to Lock Haven to see if the ailing company could be turned around. According to accounts, the representative, William Shriver, soon earned the reputation of a "kidney puncher." He went about his business with a heavy hand. He pared Piper's staff to the bone, then closed the plant.

Shriver decided that Piper needed an airplane that could be built and sold at minimum cost. Most important, it would have to be built from supplies of tubing and fabric that had not been paid for yet.

Shriver assigned the project to Walter Jamoneau, designer of the J-3 Cub, and Dave Long, Piper's chief design engineer. It took Jamoneau and Long six weeks to come up with what Shriver was looking for. It was the PA-15 Vagabond, a tiny, no-frills monoplane with a wing that was six feet shorter and a fuselage that was about four feet smaller than the Cub. At \$1,990, the Vagabond also cost a few hundred dollars less than Piper's popular trainer.

It would be stretching the truth a bit to say that the Vagabond single-handedly turned Piper around. But it did give the crocodiles something to chew. The simple little airplane proved to be very popular, and Piper soon sold enough of them to pull itself out of debt. The Vagabond also was the precursor of a number of popular shortwing Pipers, such as the Clipper, the Pacer, the Tri-Pacer and the Colt.

The original 65-hp PA-15 Vagabond not only was simple, it was downright spartan. Accounts say its rigid main landing gear was stiff enough to shake a pilot's fillings loose while taxiing on a rough field. The airplane also had only one set of flight controls.

The rough edges of the original Vagabond were smoothed out in the PA-17 model. This Vagabond had shock cords on its landing gear and dual controls as standard equipment. Performance also was improved. The PA-17 Vagabonds were powered by either 85-hp or 115-hp Lycoming engines.

Piper built a little more than 500 Vagabonds between 1948 and 1950. Today, only about 260 of them survive. Proud owners guard these little gems like the Hope diamond; they rarely are put up for sale.

You may not be able to buy one for love nor money. You can build one, though. Wag-Aero offers plans and kit



materials to construct the Wag-A-Bond Classic, an exact replica of the PA-15, and the Wag-A-Bond Traveler, a modified version of the PA-17. The Classic probably would appeal most to the purist. My choice would be the Traveler, for a number of reasons.

In many respects, the design of the Wag-A-Bond Traveler is different from the PA-17 Vagabond. But Wag-Aero's president, Dick Wagner, obviously considered each design departure carefully. Authenticity could not be dealt with lightly. Each change had to be justified thoroughly.

Well, Jamoneau and Long probably would have been pleased with Wagner's results. He took a good, simple airplane and made it an excellent, simple airplane. The Wag-A-Bond Traveler has dual controls and shock-cord landing gear, of course. But it also has two doors, four side windows and two wing tanks that hold a total of 29 gallons of fuel. The PA-17, on the other hand, has only one door, two side windows and a 12-gallon nose tank.

The Wag-A-Bond can be equipped with wheelpants and an observation window on the top of the cockpit. These frills would have given pennypinching William Shriver an aneurysm. But, they are good features.

Wagner claims the Wag-A-Bond is structurally stronger than the Vagabond. The latter's airframe was con-

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Like the original Vagabond, the Wag-A-Bond is inexpensive and a pleasure to fly. Design modifications improve strength, comfort and performance.

structed from 1020 steel tubing. The Wag-A-Bond has 4130 chrome-moly tubing, which has a much higher tensile strength than the original material.

It is interesting to note that although Piper switched from wood to metal for the Vagabond's wing spar and ribs, the Wag-A-Bond plans call for aircraftgrade spruce for these components. "Wood simplifies construction, and it is a memory item," Wagner explained. He said that, during tests, a wooden rib was exposed to pressures that had caused metal ribs to deform. When the pressure was released, the wooden rib returned to its original shape.

One of Wagner's best touches is in the cabin. A shelf behind the bench seat extends far back inside the fuselage. The back of the seat can be unlocked and folded forward. The result is a sort of bed that can sleep two in comfort and out of the elements. Wag-Aero also offers a tent that is designed to be thrown over the top of the wing.

There are about 25 Wag-A-Bonds flying, with 60 more currently under construction. Wagner said anyone with average mechanical ability can build one of the airplanes. But it takes a lot more than being good with your hands. A great deal of patience and ambition is needed to see an aircraft homebuilding project through its completion.

Wag-Aero offers about 20 separate kits for the Wag-A-Bond. In fact, the company can supply everything you would need to build the airplane, except for some tools and miscellaneous nuts and screws, for about \$10,000. All of the kit components are precut and shaped. To assemble a Wag-A-Bond,

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Wag-Aero says anyone with average mechanical ability can assemble a Wag-A-Bond. The company will provide all the necessary materials, precut and shaped, to facilitate construction of the airplane.





the builder needs only common household tools—wrenches, screwdrivers and so forth—and an oxyacetylene torch, bench grinder, hacksaws, hand drill, tin snips, spray gun and handsaws.

There is no step-by-step, do-this, now-do-that construction manual. The builder must assemble a Wag-A-Bond by reference to 23 pages of construction drawings. Each page measures 34 inches by 22 inches in size. I found the drawings to be well-detailed and not too difficult to interpret.

A first-time builder can assemble a Wag-A-Bond in about 1,200 hours. An experienced builder probably could have the airplane out of the crates and into the air in about half that time. Two years ago, 22 graduate students at Southwest Missouri State College built a Wag-A-Bond in only 17 days. They

WAG-A-BOND TRAVELER

Kit price \$8,411*
Construction Wood, metal and fabric
Time to build (est) 1,200 hr
Designer/distributor
Wag-Aero Incorporated
Post Office Box 181
North Road
Lyons, Wisconsin 53148
AOPA Pilot Operations/Equipment
Category: Sport/Special Purpose
Specifications
Powerplant Lycoming O-235 or O-290,
108-hp to 135-hp
Propeller 74 in to 76 in
Wingspan 29 ft 4 in
Length 18 ft 8.4 in
Height 6 ft
Wing area 147.5 sq ft
Wing loading 9.8 lb/sq ft
Power loading 12.6 lb/hp
Seats 2
Empty weight 725 lb
Useful load 725 lb
Payload w/full fuel 569 lb
Gross weight 1,450 lb
Fuel capacity 4.8 gal/29 lb (4.5/27 usable)
Oil capacity 7 qt
Baggage capacity 60 lb
Performance (115 hp)
Takeoff distance (ground roll) 380 ft
Rate of climb 850 fpm
Max level speed 118 KIAS
Cruise speed 112 KIAS
Fuel consumption 33 pph/5.5 gph
Range 500 nm
Landing distance (ground roll) 700 ft
Limiting and Recommended Airspeeds
Climb 70 KIAS
Vne (Never exceed) 126 KIAS
Stall 33 KIAS
*Price for basic aircraft—less engine, pro-
peller and certain special-order compo-
nents for Traveler.
All specifications are based on
manufacturer's calculations

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worked nine hours a day, seven days a week. Their biggest problem was staying out of each other's way.

Wagner said the best way to bring construction cost and time down is to scrounge, scrounge, scrounge. Many components that go into the making of a Wag-A-Bond probably could be found in the dark corners and on the dusty shelves of old hangars, or they could be salvaged from a basket-case Vagabond, Clipper, Tri-Pacer or Super Cub. A thorough hunting expedition could yield wing parts, landing gear, engine cowling and tail. The builder then could order from Wag-Aero only the individual kits he would need to complete the construction.

Once completed, a Wag-A-Bond would have to be certificated in the Experimental Category, of course. At that time, the builder also could apply to the Federal Aviation Administration for a repairman's certificate. This allows the builder to perform annual inspections of the aircraft he built. After all, who would know an aircraft better than the person who built it? It also allows the builder to save a lot of money each year on inspection fees. A repairman's certificate, however, cannot be transferred to the new owner when a homebuilt aircraft is sold. It applies only to one person and to one aircraft.

Dick Wagner has a wallet-ful of these certificates. One for the Wag-A-Bond. Another for the CUBy, a popular homebuilt replica of the J-3 Cub. Still another for the Acro Sport, an aerobatic biplane. Prototypes of these airplanes-plus a couple of Cubs, a PA-15 Vagabond and a Waco biplane—are housed in a 40- by 40-foot hangar at the Wag-Aero facility in Lyons, Wisconsin. After some pushing, pulling and pirouetting, Wagner and I had coaxed almost all of the airplanes out into the sunlight. The Vagabond, you see, was resting on nose blocks all the way at the back of the hangar. And, of course, I wanted to see it. By the time we finished clearing a path for the bright yellow PA-15, there were airplanes scattered all over the ramp at Wagner's grass strip.

There really is only one word that can describe the Wag-A-Bond adequately: It is *cute*. With its stubby but trim fuse-lage and short, fat wings, the airplane appears friendly and eager to fly.

Thirty years ago, Piper allowed its

customers to choose any color they wanted for their Vagabonds—as long as the color was yellow. No red. Sorry, no white. No stripes, even. Just yellow. Wagner's Wag-A-Bond, N34WA, is a delightful departure from tradition. It is cream-colored with blue highlights and red strips. Handsome? No. Pretty? Not really. Cute? Well, yes.

And simple. Everything you need to prod or peer at during preflight is readily accessible. N34WA has the basic kit instruments and controls—altimeter, airspeed indicator, vertical speed indicator, tachometer, oil-temperature and -pressure gauges, magnetic compass, starter, mixture control, primer, carb heat and cabin temperature controls plus a King KX175 nav/com. Four switches for the electrical system are mounted on a box located at the bottom front of the bench seat. There are sight gauges and simple on/off valves for each fuel tank.

Wagner recommends either a 108hp or a 115-hp Lycoming O-235 for the Traveler. Sure, you could mount a 150- or a 180-hp engine on the airplane. But that would be almost as dumb as cramming a Porsche engine into the rear end of a Volkswagen. The airplane, after all, weighs only 1,450 pounds at gross, and I found the 115hp engine in N34WA provides all the power you ever would need for sport flying and personal transportation.

When I got the chance to fly N34WA, the wind sock was standing straight out but not straight down Wagner's rather humpbacked grass strip. There are toe brakes only on the left side of the aircraft, but I did not need them to taxi. The big rudder and rather short-coupled fuselage make the Wag-A-Bond very easy to maneuver, even in a crosswind.

Lined up for takeoff, I asked Wagner what airspeeds to use for takeoff and climb. Dumb question. "She'll let you know when she's ready to fly," he said. And she did. Stick full back and into the wind. Full throttle. Ease the pressure on the stick just a tad to get the tailwheel off the ground. And, wow! You really can *feel* lift in this airplane. Stick back again, and she's flying. Too much power. Ease the throttle back to about 100 rpm under redline. I stole a quick peek at the instruments: 52 knots and 750 fpm. Not bad at all.

Forward visibility is very good in

climb and truly excellent in level flight. In fact, the forward visibility is so good, it takes a newcomer a few moments to get used to the spectacular view. Visibility to the sides is enhanced greatly by the extra side windows, but the pilot still needs to lift a wing to take a good look-see before rolling the airplane into a turn.

And the Wag-A-Bond just loves to roll, thanks to the short wings, the long-span ailerons and the big rudder. Wagner assured me that the airplane is a natural for basic aerobatic maneuvers. I had fun doing some mild stuff, such as Dutch rolls and steep turns.

The airplane does not like to stall, though. I tried almost everything to get it to do a power-off stall. The airplane would just start descending in a mush. Wagner showed me how to do it. What you need is a pretty high angle of attack. Same thing for accelerated stalls. The airplane just buffets a little, drops her nose and starts flying again. No doubt about it, the Wag-A-Bond is a lady.

We did some pattern work at Wag-Aero's field and at a couple of local grass strips. Under Wagner's tutelage, I learned to ignore the instruments and use my senses to bring the little airplane in for smooth, satisfying, threepoint landings. Don't watch the airspeed indicator. Look at the angle formed by the wing tips and the horizon. Don't watch the altimeter, either. Judge your progress by the angle formed between your eyes and the intended point of landing. You derive a number of cues from the airplane in the form of sounds and pressures.

The Wag-A-Bond is a delight to fly. And it is a good performer. On 115 horsepower, it will give a true airspeed of about 112 knots at 2,400 rpm, while burning only 5.5 gph.

During a break in our flying activities, Wagner showed me his new project. He calls it the Chubby CUBy. It is a four-place, 180-hp, tube and fabric airplane based on the design of Piper's Family Cruiser. The Chubby CUBy should be ready to join its kit aircraft stablemates—the CUBy, the Wag-A-Bond and the Acro Sport—this fall.

I often see pilots point to older aircraft and mumble something to the effect that they don't build them like they used to. It is true. They don't. But with a little help from the friendly people at Wag-Aero, *you* can. All it takes is a reasonable amount of money and a lot of patience and dedication. The effort will pay itself off in spades.