From the super-sleek Viking, of wooden-wing fame, to the doughty little Champ, there've been some key refinements and improvements made

Pilot Flight Check:

Bellanca's 1973 Aircraft

by DON DOWNIE / AOPA 188441

And there we were, flat on our backs at 6,000 feet!"

Up front was Bobby Bishop, aerobatic demonstration pilot for Bellanca Aircraft Corporation. We were riding in the back seat of a stock, four-place Bellanca Viking, going through part of the 15-minute aerobatic routine the company is now presenting at leading air shows throughout the country.

Bob Bishop's aerobatic demonstration is designed to make believers out of pilots who think wooden wings went out with high-button shoes. Bishop does a fine job of precision aerobatics, and the Viking seems to love it.

Actually, when you fly a Viking—and particularly the 1973 Super Viking—there's a subtle invitation to make every high-altitude turn continue right on around into a roll. Whether the reason is the silky-smooth surface of the rugged wooden wing, an extremely clean aerodynamic design, or the superb aileron balance—or perhaps a happy combination of all these ingredients—the Super Viking responds almost like a jet fighter in effortless rate-of-roll.

"We're not trying to sell the Super Viking as an aerobatic aircraft," stressed Bellanca President Robert E. DePalma. "This is merely a precision demonstration to show the structural integrity of the airplane."

Things are booming at Bellanca. Production rose from 180 units in 1971 to 459 in 1972, with an anticipated jump to over 650 for 1973, according to DePalma. Nearly half the 1973 production was sold out by the end of 1972, and the dealer organization had grown to 149: 76 Champion and 73 Viking dealerships, with 19 of these handling both lines of aircraft. Two additional buildings are planned (including 18,000 square feet of manufacturing space) at the company's Alexandria, Minn., headquarters, just as soon as the ground thaws.

DePalma talked of additions to the company's products, including a twin—either a new design, outright purchase of an existing licensed design, or an import. He added that a design study will begin shortly to explore the possibility of a completely new aircraft built around the traditional Bellanca concept of steel tube, fabric, and wooden wing. Also under consideration is a do-it-yourself kit version of the Champ, with or without the 60-hp Franklin engine.

At press time, that's Bellanca's ballpark.

It took a relaxing hour and 55 minutes to cover the 343 miles from Brackett Field, east of Los Angeles, to Carefree, Ariz., where Bellanca held its 1973 model demonstration. From wheels-up to wheels-down, including a couple of 360-degree turns in each pattern, that's 180-mph block-to-block. We flew with Ed Lamb, Bellanca's new regional sales manager, in his "old" 1972 Viking, and thus had a good opportunity to compare last year's model with the 1973 version.

If you haven't flown a Bellanca Viking for a while—and we hadn't—the only thing that makes a difference in handling is the rather short-coupled linkage on the nose gear that's caused by the design of the retraction system. The reaction is akin to the first time you drove a car with power steering, and you can "make an 'S' " of yourself on the runway the first time out. However, once you've experienced this semi-quick nose steering and have learned to anticipate it, there's no problem. Subsequent takeoffs and landings in Arizona were comfortably normal.

Top of the present line is the really rapid Super Viking 300A, with an option of Continental or Lycoming power and Rajay turbochargers (two turbocharger units on each 300-hp engine).

The most noticeable change for 1973 for "old" Bellanca pilots is an entirely new instrument panel, the first major change up front since 1964. The panel has been raised 1½ inches for more leg room and moved 1½ inches closer to the firewall.

My major objection to the "old" panel was the location of engine instruments at the lower left of the panel, with tachometer, manifold pressure and fuel flow at the top right side. Now all engine readouts are in vertical-type instruments, all located at the lower left of the panel. Fuel gauges are super-sensitive capacitance type, and manifold pressure, fuel flow, and rpm can be read in a "straight-across" manner. This new system takes a little time to interpret on a first flight; however, you'd soon learn to read it at a glance with complete accuracy.

All power controls are vernier, with the mixture mounted well below the prop control. Turbo controls, if installed, are directly below the throttle, since they are actually a second throttle for high altitudes.

Rocker-type switches are color coded. The gear handle is a standard wheel

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shape just below the left control column, and the flap handle is far removed under the right column. Flaps now have a midpoint stop available during the retraction cycle to simplify go-arounds. The single, lighted fuel selector is either left, right, or off, and is located between the front seats.

There's also a clock in the left wheel, a cutoff switch for the electric trim tab on the panel just forward of the pilot's wheel, and a shock-absorbing glare shield.

In the "audio-visual department," there's space for a complete deck of receivers with an easy-to-read, punch-button selector-switch system at the top right of the panel. You can stack two nav/com sets, transponder, digital ADF, DME, and area nav, one right under the other. There's space within the panel, just above the circuit breakers at the far right, for a flush-mounted stereo tape set. In previous models, the tape deck was referred to as a "knee knocker."

Other key improvements are to be found in the fuel system. The 1972 model had five tanks, two in each wing, and a 20-gallon "aux" under the baggage compartment. Two fuel selectors were required, one between the seats and an "aux selector" on the floor, where it was singularly difficult to read, particularly if you're cursed with bifocals. The new model has linked both wing tanks so they feed as one, with merely a single left-right selector between the seats. A 15-gallon "aux" tank beneath the baggage compartment brings the range up to 1,200 miles (at economy cruise) for those with a great deal of willpower.

Many former options are now listed as standard equipment. The new Viking has a full gyro panel, wing-leveler (Mitchell Century I), autopilot, "auto axion" gear for those who tend to forget, tinted windows, and dual controls. In deference to the ecology, mufflers are standard equipment. Factory-recommended price for the 300A, with a Continental IO-520 and new engine mounts, is $32,550. With the Lycoming IO-540 300-hp, it's $34,345, while the Turbo-Viking with dual Rajays is $40,590.

We bored a few holes in the Arizona skies with Sales Manager Rich Haas in 300A N39857. The new interior is plushy, with reclining seats and matching headrests "scientifically contoured to provide maximum long-range comfort." The baggage compartment is 25% deeper, and there's an optional extension tube aft for skis and golf clubs.

The Super Viking's door arrangement is so simple that it almost scares you. Shut the door, rotate the latch forward and down 90 degrees, and that's it. The latch is attached to a two-point door lock that pressures the door seals with a minimum of pilot effort.

We found no problem with the nosewheel steering and were soon reading an 1,800-fpm rate of climb. There was that same wonderful aileron response, which tempted us to do a roll; however, we resisted temptation since aero-

Licensed on both skis and floats, Bellanca's workhorse Scout can be used for such multiple purposes as cargo-hauling, camping trips, flight instruction, aerial photography, etc. With strap-on spray tank and spray boom, it's an agplane. Photo by Dick Cobb

batics are legal only in the "experimental" category. I climbed over into the back seat and made some photos of the new panel "at work," then moved back up front for another look at the saguaro cactus and red rocks of nearby Skull Mesa and Bloody Basin before we returned to Carefree.

The Viking is such a clean bird that you must plan ahead to get slowed down before landing. The factory points out that the Viking, in level flight, will decelerate from 190 to 80 mph in only 10 seconds, if you smoothly retard the throttle to idle, drop the gear at 140, and drop full flaps at 120.

Landing-gear extension is virtually idiot-proof. When the airspeed goes below 90 mph, the gear will drop, even with the selector switch in the "up" position. The warning horn gives an intermittent blast, compared with the steady tone of the stall warner, whenever the manifold pressure is cut to 12 inches. The gear will come up on takeoff only when the selector is in the "up" position, aircraft weight is off the "squat switches," and the throttle is wide open. The gear operates from airspeed, but full throttle will override the system. Once 105 mph has been reached after takeoff, the throttle may be reduced and the wheels will remain in the wells.

Viking Series
Specifications And Performance

	Super Viking	Turbo-Viking
Engine	Lycoming IO-540*	Lycoming IO-540-TC
Hp @ rpm	300 @ 2,700	300 @ 2,700
Propeller	Hartzell 3-blade, constant-speed	same
Gross weight (lb)	3,325	3,325
Empty weight (lb)	1,950	2,010
Useful load (lb)	1,375	1,315
Top speed (mph)	194 TAS	235 TAS
Cruise speed (mph)	190 TAS (opt. alt.)	235 TAS @ 20,000
Stall at gross (mph)	62	62
Climb at sea level (fpm)	1,800	1,800
Service ceiling (ft)	21,600	24,000
Takeoff distance (ft)	460	460
Landing distance (ft)	575	575
Fuel capacity (gal)	70 (85 opt.)	85
Standard price	$32,550	$40,590

* Also available with Continental IO-520 engine

Bellanca Aircraft Corporation's Turbo-Viking 300A (at left). Among improvements in the 1973 Vikings are an entirely new instrument panel and a much-simplified fuel system with a single left-right tank selector replacing the two required in older models. Photo by Dick Cobb

Both 1973 demonstrators at Carefree were nonturbocharged, but we had flown an older Turbo-Viking (N7330V) for 9½ hours on a trip from Long Beach, Calif., to Salt Lake City, Ut., Elko, Nev., and return. Believe me, that turbo system is a real sky-grabber, giving the aircraft a service ceiling of 24,000 feet and a cruising speed of 235 mph at 20,000 feet.

Anyone who flies a Viking should take the opportunity to go through the company's wooden-wing factory in downtown Alexandria, Minn. We've made two trips through this unique

At Bellanca's factory in Alexandria, Minn., a workman toils over a Viking wooden wing. All photos by the author except as noted

Citabria factory at Osceola, Wis., was rebuilt following a disastrous fire in 1971 that cut production that year to 177 units, compared with 242 in 1970. For 1973, Bellanca's reported goal is two-a-day production here.

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fabrication plant, and we've come away both times with a great admiration for both the product and the dedication of the woodworkers who put these wings together. They'll show you the intricate structures, new space-age glues, stacks of carefully selected woods, and the dip tank that coats the entire finished structure. These men and women of the North tell stories of wooden wings that have come back to the factory for repairs after Vikings have cut down trees and even telephone poles in mishaps. They show how leading edges are painstakingly rebuilt to original specifications and sent back into the air as good as new. There's a quiet pride of workmanship in this wing plant, perhaps because the wooden wing is such a specialty in today's construction techniques.

Now that we've covered the Viking series, let's turn to Bellanca's other line: the Citabria taildraggers, produced at the company's Osceola, Wis., plant.

In the past 18 months, my wife Ruthie and I have ferried four Citabrias of various types to West Coast dealer Mike Dewey (AOPA 255296) in Santa Paula, Calif. Several recent travel features in The PILOT have come from these delivery flights, and readers are familiar with the performance of both the Citabria and the Decathlon [see "Pilot Flight Check: The Decathlon," June 1972 PILOT].

Changes in the 1973 Citabria line are more than skin deep. For example, Scott tailwheels have become standard equipment, thus eliminating the embarrassment, encountered on occasion, of going back to your point of touchdown to pick up centering springs thrown off when the previous tailwheel began to castor on paved runways.

On our most recent Citabria delivery, Ruthie noticed that the back seat of the tandem cockpit has been raised more than two inches for better passenger/instructor visibility.

All the 1973 Citabrias have a completely redesigned engine cowling, with only a small access door for oil. The large, hinged cowling had been known to loosen in the event of inadequate preflight and sticking Dzus fasteners. Two older models that we delivered arrived in Santa Paula with cloth tape over the front cowling fastener, but that's all fixed now.

The new Decathlon has a simpler paint scheme with spanwise stripes to make the wing look longer. (It also saves on production time.) Gap strips are used on the elevator as well as on the ailerons. Ball-bearings have been added to the control linkage on the Citabria. The inverted oil system, with a scavenger pump and a return line to the case (keeps the fuselage cleaner and extends inverted-flight time) is now also available on the Citabria package "B". Fuel tanks have been redesigned—except on the Champ—and are made on a hydroform press with just two pieces of clamshell-shaped aluminum and a single welded seam.

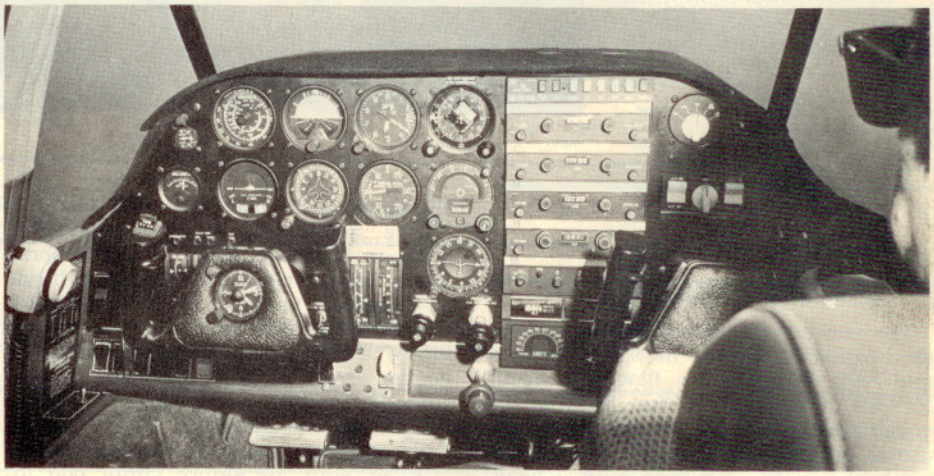
Also on the flight line at Carefree was the much-modified 60-hp Champ. We had flown the first Champ to the West Coast ["Over Mountain And Plain In The 'Cheap' Champ," Nov. 1971 PILOT] and had reported some interesting and unexpected engine characteristics.

Bellanca/Citabria dealers will tell you that company president Robert DePalma is sometimes blunt, so it wasn't a great surprise when DePalma climbed out of his Super Viking after a chilly trip and greeted us with the comment, "Oh, you're the fellow who wrote that bad story about the little Champ." Without even a pause for breath around his ever-present cigar, he grinned and added, "Trouble is, you were right!"

Now the Champ, which always had a fine airframe, is equipped with a complete electrical system: generator, battery, starter, lights, and power for a radio. The nonelectrical version is no longer in production, and the price has gone up to $7,130. The modified "two-banger" has a mixture control as standard equipment, an oil-breather line to solve the problems of crankcase oil frothing, shock-absorbing engine mounts, a drastic change in the cowling, and an ample opening at top dead-center for addition of oil. Main gear tires have grown from 5.00 × 5 to 6.00 × 6, so you'll no longer get stuck in large gopher holes.

Addition of the electrical system and associated accessories has cut the useful load on the Champ to 395 pounds. Take away 78 pounds for 13 gallons of fuel, and 4.35 pounds for 2½ quarts of oil, and you have a legal cockpit capacity of 312.65 pounds. That figures quickly to two 150-pound people with toothbrush and shaving kit.

Ruthie and I climbed into N31290 on a cool day at Carefree and revisited the Champ. The engine fired on the first compression stroke, and the singular "pop-pop" of the Franklin seemed much smoother than we had remembered. Takeoff was normal and rate of climb was most acceptable, particularly when aided by a bit of ridge wind. The cabin heater worked well, and we were soon at 5,000 feet, looking north toward clouds hanging over the "rim" of the Mazatzal Mountains.



Redesigned Viking 300A instrument panel, photographed in flight. Note vertical-readout engine instruments behind left wheel and complete radio deck at right of panel. Mixture control is below the prop control. On the turbo model, vernier control goes below the throttle.

Redline on the tach is 3,200 rpm, and we were able to indicate 90 mph at full throttle at 5,000 feet. That's just a little faster than the Champ's specifications, but we did not run an accurate groundspeed check. Visibility is excellent and control response is good. When you throttle back for a letdown, the shake and rattle of the older engine mounts has been well dampened.

The Champ is truly a fun airplane, and I found an excuse to make a few low passes down the runway while Ruthie took some photos.

One minor gripe was immediately evident on the Champ. The rubber gasket around the fuel tank is red in color, since that's the way the subcontractor builds it. Red stands for 80/87 octane, while diet for the 60-hp Franklin is strictly 100 octane or higher. The young lady operating the gas truck at Carefree promptly reached for the 80/87 hose despite the two small decals calling for 100 octane. She'd have filled the tank with lower-octane fuel if we hadn't been watching. A coating of blue/green coloring around the gas cap would help, plus LARGE decals cautioning "100 octane only."

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The 1973 60-hp Champ (opposite) zips by saguaro cactus at Carefree, Ariz. Champ now has a complete electrical system; nonelectrical version is no longer in production.

Bellanca Service Manager Norm Haglund demonstrates a 1973 Scout with 90-gal Sorensen spray tank installed. Following its appearance at Carefree, this aircraft was flown to the National Agricultural Aviation Association Convention at Las Vegas, where it was sold within the week.

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The newest Champion in the line is the workhorse Scout, first delivered in mid-1972. The one we flew was Scout No. 69 off the production line, so it's evident that the basic concept of multi-use is taking hold.

The Scout is a Citabria with a heavier landing gear, huge 8.50 × 6 tires and disk brakes, a removable metal-covered belly, and an oversized tailwheel. The hinged side windows, similar to those on the J-3 Cub but beefed up, are ideal for photography. The Scout has been used for glider towing and as a banner tug. It's licensed on both skis and floats. Both seats fold forward, and the back seat and stick are easily removed. Covers for the stick housing and throttle are standard so that the ship can be used as a pickup truck.

The Scout will carry a 90-gallon, strap-on Sorensen spray tank and spray boom. In the "restricted" category, it has a whopping payload of 1,175 pounds; that's 25 pounds more than it weighs empty. Without external tank and spray booms, gross weight is 1,650 pounds, just 43 pounds more than the gross weight of the Citabria. The Scout is fully aerobatic without external stores.

Even with an empty spray pod attached, the Scout flies just like any other Citabria—and that's good! We flew N31292 with veteran Norm Haglund, service manager and now head of Bellanca's new warranty program. The new Scout was equipped with toe brakes that were comfortable, provided additional leg room, and performed nicely. N31292 had the brakes adjusted perhaps 10 degrees too far toward the floor, but that's merely an adjustment.

With the belly tank aboard and the spray booms tied beside the rear seat, our Scout's cruise performance was somewhere between those of the 115-hp and 150-hp Citabria. A "climb" prop comes as standard equipment. In a full applicator's configuration and with full over-gross weight, top speed goes from 128 mph down to 90 mph, and full-flap (35°) stalling speed jumps from 45 to 55 mph. Take all the appendages off, however, and your 350-fpm rate of climb goes right back to 1,145 fpm.

The new Scout was headed for the National Agricultural Aviation Association Convention in Las Vegas. I'd arranged to bring it back to Los Angeles at the conclusion of the ag show, but the complete package was sold at the show and the new owner took it to Greeley, Colo. We've already made a pitch to ferry out a Scout in the future to visit some of the less-improved flight strips adjoining ghost towns of the West.

Takeoff and landing performance of the Scout is better than that of the Citabria because of the climb prop and larger tires. The classy-looking wheel fairings and smaller 6.00 × 6 tires of the Citabria make real bush flying a bit more desirable in the Scout. We'll "scout" that one out when the deep freeze moves out of the Osceola, Wis., factory.

Recommended list prices for the Citabria clan are $7,130 for the electrified 60-hp Champ; $8,535 for the standard 115-hp Citabria; $10,700, $11,875, and $11,350 for the package "A", "B", and "C" Citabria; $12,975 for the Scout; and $16,525 for the Decathlon.

DePalma reports that Bellanca is now the third largest single-engine-aircraft manufacturer and the fourth-largest general aviation company in unit deliveries. From what was shown for 1973, Bellanca is certainly striving for the No. 1 spot. □

Scout Specifications And Performance

	With Spray Unit	Without Spray Unit
Number of seats	2	2
Powerplant	Lycoming O-320-A2B	same
Hp @ rpm	150 @ 2,700	same
Propeller	Sensenich	same
Gross weight (lb)	2,325 (restricted)	1,650 (aerobatic)
Empty weight (lb)	1,150	1,136
Fuel capacity (gal)	40	40
Fuel consumption (gph)	9	9
Cruise speed (mph)	85	125
Top speed (mph)	90	128
Stall speed, no flaps (mph)	60	51
Stall speed, 35° flaps (mph)	55	45
Rate of climb (fpm)	350	1,145
Takeoff (ft, over 50-ft obstacle)	NA	525
Land (ft, over 50-ft obstacle)	NA	690
Standard Price	NA	$12,975