BELLANCA VIKING

High performance in a 50-year-old design

Bellanca Vikings are not often found parked among other rental aircraft in front of FBO offices or shuttling busy business pilots on frequent trips in foul weather. Most owners tend to coddle their Vikings, lavishing them with expensive avionics and meticulous care even though they may be flown only occasionally. It is the kind of attention that befits a contemporary classic.

The Viking is the culmination of a half-century of refining Giuseppe M. Bellanca's concept of a single-engine airplane for personal transportation and recreation. The result is a design that mixes anachronistic features, such as a hand-crafted wooden wing and welded tubular steel fabric-covered fuselage, with 165-KTAS performance.

Other singles are noted for their efficiency, com-

BY MARK R. TWOMBLY

PHOTOGRAPHY BY ART DAVIS

fort or simplicity; the Viking is revered for the way it flies. The controls are feather-light and beautifully balanced. Long ailerons provide immediate and rapid roll response—a Bellanca's most endearing trait. Viking owners willingly tolerate a narrow cabin, expensive fuel flows and the maintenance of wood and fabric as a tithe for silky handling.

There is more to the Viking's appeal than handling. Three hundred horsepower is available for a short takeoff roll and rapid climb. Owners point with pride to the craftsmanship evident in the tight fit of the cowl, the fiberglass-smooth wing surfaces and the absence of plastic panels in the generously carpeted and cloth-covered interior.

The Viking's lineage dates back to 1936 and the fixed-gear 14-7 Bellanca Junior and the retractable-gear 14-9 Crusair. The Crusair's simple aft-retracting landing gear mechanism left half of each wheel protruding into the slipstream, but at that time a retractable landing gear was an innovation for lightplanes, as was the plywood wing covering. The lone rear-seat passenger sat sideways, and there were three vertical stabilizers. The Crusair's clean lines and efficient Bellanca B wing enabled it to achieve a cruise speed of 120 mph with a 90-hp LeBlond or Ken Royce radial engine. Later versions of the Crusair, the 14-19 Cruisemaster and the Bellanca 260, had a horizontally opposed engine, more wing area and a fourth seat, but the basic design remained intact.

The Viking, introduced in the fall of 1966, was a direct descendant of the 14-19-3A Bellanca 260C, the first model to feature both tricycle landing gear and a single, large, swept vertical fin. The 17-30, first of the Viking series, is powered by a Continental IO-520-D rated at 300 hp for takeoff and 285 hp for maximum continuous power. Bellanca advertised a maximum speed of 184 knots (212 mph) for the Viking 300, compared to 181 knots (208 mph) for the 260C, which weighed 50 pounds less. Owners report that their Vikings cruise at between 145 KTAS and 165 KTAS.

In 1969, Bellanca certificated a pair of 300-hp Lycoming IO-540-powered Vikings: the normally aspirated 17-31 and the dual-Rajay-turbocharged 17-31TC. At its critical and maximum operating altitude of 24,000 feet, the Turbo Viking will cruise at 198 KTAS (228 mph) on 16.6 gph, according to the manufacturer. The turbochargers are operated by a separate vernier control located beneath the throttle and propeller controls. In 1975, the turbocharging system was redesigned to include fixed wastegates, and the manual controller was eliminated.

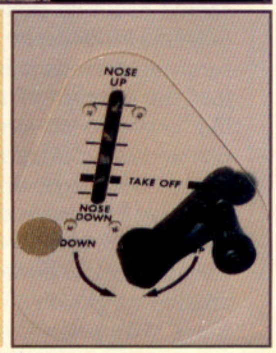
Bellanca built 262 Continental-powered Vikings and only a handful of Lycoming-powered units before the Super Viking appeared in 1970. The main differences between the standard and Super Viking are an increase in fuel capacity from 58 gallons to 72 gallons and an increase in gross weight from 3,000 pounds to 3,325 pounds. Gross weight of the early Vikings can be increased to 3,200 pounds by replacing the oil-and-spring-dampened landing gear struts with air-oil units.

Because of their lower price, Continental-powered Vikings sold consistently better than Lycoming models. Bellanca has built about 980 Continental-powered Vikings, 171 normally aspirated Lycoming versions and 154 turbocharged-Lycoming Vikings. The Lycoming engine option costs as much as $3,000 more than the Continental. The Lycoming's 2,000-hour TBO is 300 hours more than the Continental's, but the Continental engine is less expensive to overhaul.

The fuel system underwent a second, more significant redesign in 1973. Until then a Viking could have as many as five fuel tanks and fillers, including a 19-gallon main tank in each wing and a 20-gallon fuselage tank below the baggage compartment, plus a pair of optional 17-gallon wing auxiliary tanks. Two separate fuel selectors must be manipulated, and the fuel gauge shows only the amount remaining in the tank in use. In 1973, Bellanca switched to one 34-gallon tank in each wing (30 gallons usable) and an optional 15-gallon fuselage tank. All the tanks are controlled by a single four-position selector located between the front seats.

The National Transportation Safety Board (NTSB) issued a safety recommendation to the FAA last July (A-86-54 through A-86-60) calling for retrofit or modification of the fuel system on 1967 through 1972 Vikings. Fuel mismanagement was responsible for 63 loss-of-power accidents in Vikings from 1967 through 1985, according to the safety board, and 75 percent of the accidents involved pre-1973 models. Most of the accidents resulted from fuel starvation, even though there was fuel in other tanks. The safety board also recommended that the flight manual for early Vikings be revised to include a more detailed explanation of the fuel system, and that fuel quick-drain valves be installed on all Vikings at the next annual inspection. The standard fuel tank drains are located underneath an access door on the belly, and the only way to reach them is to lie down on the ground. Even if the pilot goes to the considerable trouble of draining the lines, it is possible that undetected water can remain trapped in the tanks, according to the NTSB. Bellanca offers a quick-drain retrofit kit for Vikings. The safety board also recommended that the annual inspection include the fuel filler port seals and drains to preclude water from collecting around the recessed fuel ports and seeping into the tanks.

The final changes to the Viking took place in the 1979 model year. With an infusion of money from the Anderson-Greenwood Aviation Corporation, which at that time owned the majority of Bellanca's stock, Bellanca undertook an aerodynamic cleanup of the Viking. The nose-gear hinge, which is attached to the engine mount, was redesigned to allow the nosewheel to retract completely into the cowl forward of the fire wall. A larger oil sump on the Lycoming engine made it impossible to make the same change on the 17-31A and -31ATC. Nose gear doors and cowl flaps were added, and wing tip lights were recessed and covered with flush lenses. The flashing beacon was replaced with strobes, and antennas were buried beneath the skin. The changes added about 10 knots to the Viking's cruise speeds. At 7,500 feet and 75-percent power, a normally aspirated 1979 or later model Super Viking will cruise at


NOSE UP
TAKE OFF
NOSE DOWN
DOWN


Controls
Instruments
Run-Up
Trim
Seat Belt
Flaps
Seat Belt

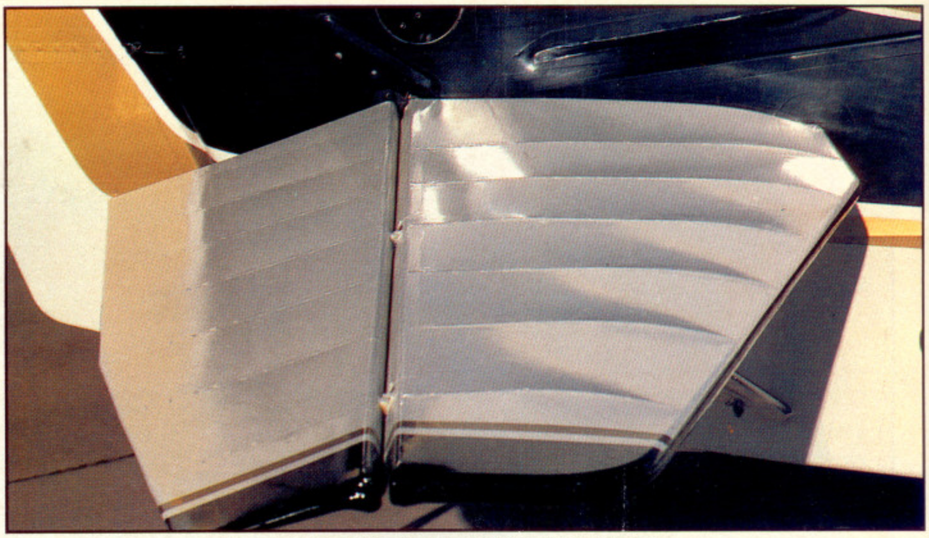
172 KTAS, according to Bellanca.

At the end of 1985, there were about 1,120 Vikings registered with the FAA. A used Viking can be an excellent value. A 10-year-old Bellanca is worth about 56 percent of the $59,000 that it sold for new, according to the *Aircraft Blue Book—Price Digest*.

The low price is a reflection of the archaic design and concern over wood wings. Wood is an excellent material for aircraft structures. Strong and flexible, it can be shaped into smooth, rivet-free surfaces and in many cases is more easily repaired than metal. Each Viking wing contains about 1,800 pieces of wood in the laminated Sitka spruce forward and rear spars, spruce and mahogany ribs and mahogany plywood skin panels. The seamless plywood panels give the wing torsional stiffness and a smooth, lower-drag finish. The trailing edge of the wing flairs elegantly back and up to meet the fuselage; one can imagine Giuseppe Bellanca painstakingly sculpting the wing-fuselage juncture to match exactly the flow of air over the wing root. Wings are dipped in water-resistant sealer and covered with a final layer of synthetic cloth and nitrate and butyrate dopes (in 1976 the factory switched to polyurethane) for moisture protection and a glassy finish.

With proper care, the wooden wing should retain its strength and integrity indefinitely. Bellanca used to sponsor aerobatic demonstrations in Vikings to tout the strength of the airframe. But, like any wooden structure, the spars, ribs and wing skins are susceptible to decay from excessive moisture. The wood used to construct the wing is dried to a moisture content of eight to 12 percent, well below the level considered favorable to growth of decay-producing fungi. With prolonged exposure to water, the moisture content of the wood could reach or exceed the fiber saturation point of about 28 percent. In warm temperatures, the fungi flourishes in the moist environment, destroying the wood fibers.

Ideally, a Viking should be hangared in a temperature- and humidity-controlled environment and flown often to ventilate moisture from the interior of the wing. In any case, Airworthiness Directive (AD) 76-08-04 mandates that the wing be inspected annually to check for decay in the wood. The inspection procedure is explained in detail in Bellanca service letter 87A, dated April 12, 1976. The service letter and AD were issued



following the in-flight failure of a 17-30 Viking wing at Newton, New Jersey, in March 1975. The NTSB determined that the failure was caused by wood rot in the spar that had not been detected in previous inspections.

A second in-flight wing failure occurred in 1983 at Littleton, Massachusetts, when the right wing of a turbocharged Bellanca Super Viking separated from the fuselage. The NTSB said the probable cause of the accident was extensive wood decay in the spar that had developed over two to three years. The aircraft had been inspected just three weeks prior to the accident, according to the NTSB, and had been through regular 100-hour and annual inspections before that, but the deterioration in the spar-attach area was not discovered. This accident led the NTSB to recommend in January 1984 that the FAA impose more stringent measures to check for deterioration in the Bellanca's wooden wing structure. The NTSB called for an emergency AD to inspect wings on all 14- and 17-series Bellancas. The inspection procedure should begin with removal or disassembly of the wing and/or the lower wing straps and bolts where the spars attach to the fuselage, the safety board said.

The FAA rejected the NTSB recommendation. FAA engineers inspected a Bellanca wing and determined that both the forward and rear wing spars inboard of the landing gear are easily visible, except for the butt portions hidden by the wing straps. However, an inspector can use an angled probe to check the areas above, below and between the wing straps, the FAA said. Also, the wing root fairings can be removed to inspect the butt portions of the spars, according to the FAA.

A compromise of sorts was proposed: In lieu of an emergency requirement to immediately remove and inspect Bellanca wings, the FAA should issue an AD requiring a more comprehensive examination of the wing at the next annual or 100-hour inspection. That, too, was rejected. The FAA noted that accident records from 1962 through November 1984 showed no other in-flight Bellanca wing failures due to wood rot. Further, according to the FAA, service difficulty reports (SDRs) indicate that inspectors who follow approved wing-inspection procedures are able to detect deterioration in the spar.

Bellanca recommends that the wing inspection begin with a detailed examination of the exterior to check for areas where moisture could reach the wood. Swollen or soft spots, discoloration and cracks in the finish may indicate excessive moisture or decayed wood. One critical area is the wingwalk. If scuffed areas are not repaired, the fabric covering can crack or wear through, allowing moisture to seep into the plywood wing skins. Moisture can collect around leading-edge wing root fairings, which cover the butt ends of the forward spars. Any moisture that gets past the fairings can attack the ends of the spars around the fuselage attach straps. The fairings must be completely sealed to guard against moisture contamination. Other areas susceptible to seepage are the seals around fuel filler ports and fuel tank sender access covers, the landing light lens retainer assembly and seams around the fuel tanks. The seams bulge slightly and with time and wear can crack. Blockage of drain holes that dot the underside of the wing (one drain hole for every box section in the wing) may be an indication of trapped moisture. Also, exposed wooden flap stops tend to soak up moisture and may need replacing.

The Bellanca service letter goes into considerable detail on procedures for inspecting the interior of the wing after removing inspection and access covers. In addition to conducting a visual check, an inspector should use a special meter to determine the moisture content of the wood. The moisture level is measured by passing an electric current between shallow metal probes inserted in the wood. Saturated areas that have not decayed can be dried out. Some decay is reparable, usually at great expense, depending on the location and extent. The procedure for repairing wood structures is explained in FAA AC 43-13.

A Viking wing inspection is not necessarily expensive. Cap Aviation, a Bellanca service center located at Reading Municipal Airport in Reading, Pennsylvania, charges $550 for a Viking annual inspection, the same price it charges to inspect a Mooney 201.

Service difficulty reports from 1980 through September 1985 contain numerous accounts of Viking landing gear problems. There are several reports of gear malfunctions caused by cracked or broken welds and leaks or low fluid levels in the electrically actuated hydraulic system. It is a tedious, time-consuming job to service the gear pump, which is mounted just below one of the right front seat rails.

The Viking gear has an automatic extension/antiretraction feature controlled by pitot-static tube pressure. The gear automatically extends when airspeed falls below about 91 KIAS and will not retract below that speed except with full throttle. The system is intended to prevent inadvertent wheels-up landings, but it also makes it difficult to practice slow flight and stalls in a clean configuration. Even worse, it presents a potential hazard if an emergency dictates a long power-off glide and wheels-up landing.

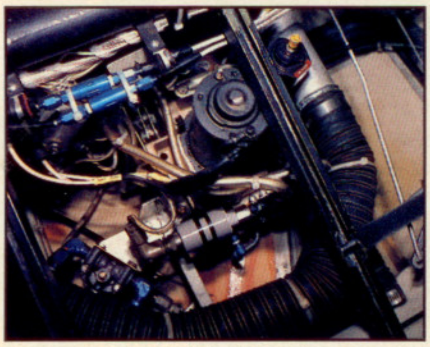
The only way to override the mechanism is to turn the master switch off or advance the throttle to Full Open. Emergency gear extension is simple: Select gear down, slow to about 90 KIAS and push a lever located beneath the fuel selector handle between the two front seats to relieve hydraulic pressure, which allows the gear to free fall.

The Viking cabin is snug. The panel, which is relatively close to the front-seat occupants, is narrow but has a high arch, and there is ample room for instruments and avionics. Vertical-scale engine and power gauges were standard equipment on 1973 to 1978 models.

There is no rudder trim other than a ground-adjustable tab, but a surprisingly small amount of right rudder is needed to keep the Viking tracking straight on climb-out. The open nosewheel well provides a clear exit path for engine cooling air, making cowl flaps unnecessary.

With two aboard and the tanks three-quarters full, we were about 250 pounds shy of gross weight at the start of a brief evaluation flight in a 1974 Lycoming-powered 17-31A Viking owned by Dr. William P. Roberts Jr., AOPA 544580. The Viking is rotated at about 75 knots for a smooth lift-off. Since the gear will not retract below 91 knots if the throttle is reduced, Roberts maintains full power until reaching pattern altitude, then reduces power to a conservative 24 inches manifold pressure and 2,400 rpm for both climb and cruise. In hot, turbulent air, that power setting produced a climb rate of about 800 fpm, judging from the bouncing VSI pointer.

A two-way DME speed check at 3,000 feet and 65-percent power showed an average groundspeed of 149 knots at 13 gph, which is very close to book performance. Turns required only very light pressure on the control wheel and rudder pedals. The roll response is quick, with good control harmony.



Front seat rail obstructs landing gear pump, complicating service and maintenance (left). Aluminum corrosion is not a concern with a Viking wood spar; decay-producing fungi is (right).

The Viking is slippery, and a quick descent could result in shock-cooling the engine. Gear-down speed is a low 122 KIAS, and flaps should not be extended above the 104-KIAS maximum flap extension speed. The electric flaps can be used in one of three positions—up, 23 degrees down and 45 degrees down—and are effective in slowing the Viking to final approach speed. But beware of steep, power-off approaches. In this flight regime, the Viking tends to mush with vigor. The pilot's operating handbook warns that a full-flap, power-off final approach descent "cannot be arrested if airspeed falls below 78 mph."

Downwind legs should be flown at the recommended airspeed of 105 KIAS.

VIKING MILESTONES

Bellanca 14-13 Cruisair Senior (1945)

The 14-9 Crusair, certificated in 1939, was the patriarch of the series that evolved into the Viking. The number "14" in the model designation stood for the Crusair's 140-square-foot wing area, while "9" represented 90 horsepower. A later postwar version of the Crusair, the 14-13, was powered by a 150-hp Franklin flat-six engine and had 161 square feet of wing.

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In 1950, Bellanca introduced the 14-19 Cruisemaster, powered by a 190-hp Lycoming. Beginning in 1957, a 230-hp Continental was offered on the Cruisemaster, and two years later it became a tricycle-gear aircraft with a 260-hp Continental. The Cruisemaster name was dropped, and the 14-19-3 was simply called the Bellanca 260. The last major change to the 14-19 series occurred in 1963 with the introduction of the 14-19-3A 260C, which had a large swept vertical stabilizer in place of the familiar triple tail of old.

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The 17-30 Viking 300, certificated in 1966, represented another step in Bellanca's efforts to keep an aging design competitive. The Viking and 260C were both marketed in 1967 and 1968, but the emphasis was on the Viking, and the 260C was dropped from the product line.

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In 1969, Bellanca added the Lycoming-powered 17-31 and dual-turbocharged 17-31TC to the line-up. The nose bowl was redesigned in a more streamlined shape, which eliminated an unsightly grill below the propeller spinner. The Auto-Axion landing gear extension/antiretraction system was a standard feature beginning with the 1969 models, and electric flaps replaced the hydraulic flap system of earlier models. Also, the landing gear and flap selectors were moved from below the front seats to the instrument panel.

The three Viking models became Super Vikings in the 1970 model year when Bellanca obtained Federal Aviation Regulation Part 23 certification for a 325-pound increase in maximum gross weight to 3,325 pounds. Standard fuel capacity also increased from 58 gallons to 72 gallons. (The 17-30, 17-31 and 17-31TC Vikings were certificated under an amendment to the Model 14-19 type certificate, issued in 1949 under Part 3 of the Civil Aviation Regulations.) From 1970 on, Super Vikings have been powered by either a 300-hp Continental IO-520-K1A or a 300-hp Lycoming IO-540-K1E5.

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The fuel system was redesigned and simplified again in 1973. Standard fuel capacity became 60 gallons, with an optional 15-gallon fuselage tank, all managed by one fuel selector. The instrument panel was reconfigured for a center avionics stack, vertical scale instrument and power gauges and standard T-arrangement of flight instruments.

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Bellanca switched from manually controlled turbochargers to a density altitude-compensating system in the 1975 Turbo Viking. Pressure relief wastegate valves prevent the throttle-controlled turbochargers from over-boosting. An optional ski tube with a 20-pound capacity was introduced. The next year Bellanca began offering interiors finished in crushed velour.

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The Viking underwent an aerodynamic cleanup for the 1979 model year. The nosewheel retracts fully and is enclosed by gear doors, but only on the Continental-powered 17-30A. Wing tip lights are flush-mounted, and the flashing beacon is replaced by strobes. The changes added about 10 knots to the Viking's cruise speed. All Vikings built since then are identical to the 1979 model. *– MRT*

17-30A Super Viking

Final approach is best flown at about 85 knots with power until over the numbers. Depressing the electric trim button in the Up position on short final helps assure a nose-high touchdown.

Even though it is a complex single, the Viking is relatively simple to fly. With proper training, low-time pilots could step up to a Viking with confidence.

The decision to purchase a Viking should be predicated on a thorough inspection of the aircraft by a shop experienced in wooden structures. A good place to start is the factory in Alexandria, which has an excellent reputation for technical and parts support of Vikings. Telephone calls to the factory usually are answered by the president of the company, Charles F. Holm. Other longtime Bellanca service and repair centers are Webers Aero Repair, also at Chandler Field in Alexandria; Cap Aviation in Reading; Air Repair, Incorporated, in Santa Paula, California, and Miller Flying Service in Plainview, Texas. There is no active Viking owners association, but Pamela B. Foard and Larry D'Attilio, who are restoring a 1949 19-13 Cruisemaster, have started publishing "Bellanca Contact," a newsletter for Bellanca owners and restorers. A four-issue subscription costs $18. For additional information, contact Foard and D'Attilio at 1820 North 166 Street, Brookfield, Wisconsin 53005; telephone 414/784-0318.

The low prices that used Vikings command put them within reach of pilots who might otherwise rule out a high-performance single, and therein lies a danger. Buyers with limited budgets may not have the wherewithal to care for the aircraft properly. If you can't afford a hangar, the saying goes, you can't afford a Bellanca. The message is clear: Special attention must be lavished on this special aircraft to maintain its wood and cloth integrity. □

THE FAMILY TRADITION

The manufacturing of Giuseppe M. Bellanca's Crusair-inspired design has persevered through a turbulent history. There were a number of changes in corporate ownership and many financial ups and downs.

The story begins when Bellanca left his native Italy and emigrated to the United States in September 1912. Drawing on his gift for mathematics, he established the Bellanca Aeronautical Company, and designed a 30-horsepower parasol monoplane in the back of his brother's olive oil import shop in Brooklyn, New York. One of the directors of the company was an attorney, Fiorello H. LaGuardia, who taught Bellanca to drive an automobile in exchange for flight instruction.

Despite a series of commercially unsuccessful designs and company ventures, Bellanca gained a reputation as a designer of highly efficient aircraft with good low-speed characterictics and high cruise speeds. He was hired by the Wright Aeronautical Corporation in Paterson, New Jersey, to design an airframe for the 200-hp Wright "Whirlwind" J-5 engine. The wood, steel-tube and fabric WB-2, later named the *Columbia*, set a number of efficiency and world endurance and distance records. A few weeks after Charles A. Lindbergh flew to Paris in *Spirit of St. Louis*, Clarence Chamberlin and Charles A. Levine flew *Columbia* 3,911 miles from New York to Germany. In recognition of his design, Giuseppe M. Bellanca was featured on the cover of *Time* magazine.

The Bellanca Aircraft Corporation was established in New Castle, Delaware, just south of Wilmington, on December 31, 1927. With the help of some wealthy Delaware patrons, Bellanca built a new factory complete with runway and seaplane base and began to turn out advanced single-engine monoplane designs including the Pacemaker, Skyrocket, Airbus and Tandem. In 1931 a Pacemaker powered by a Packard diesel engine set an unrefueled endurance record of 84 hours 33 minutes over Jacksonville, Florida. Bellanca continued to design and build custom aircraft at New Castle—the *Reliance, Rose Marie,*

Giuseppe M. Bellanca

Green Flash, Pathfinder, Litvanica, White Falcon, Miss Veedol, Miss Dorothy and *Flash*—that set record after record: 1928, U.S. endurance record, 59 hours seven minutes; 1929, altitude record for commercial aircraft, 30,453 feet; 1931, first nonstop flight across the Pacific, 4,500 miles in 41 hours 13 minutes. By 1936 Bellanca aircraft had made 11 transatlantic flights and held more records than any other make of aircraft.

In 1936 Bellanca turned his attention to smaller aircraft for personal transportation. His design goals were benign stall characteristics and good low-speed control for short field landings, coupled with efficient, high-speed cruise capability. The result was the 14-9 Crusair, and beginning in 1950, the 190-hp Lycoming O-435-A-powered Model 14-19 Cruisemaster. Production of the Cruisemaster in New Castle lasted just two years. In 1954 a New York financier who had acquired control of Bellanca went bankrupt and was forced to sell the tools, plans, patents and rights to manufacture and distribute the Cruisemaster to Northern Aircraft, Incorporated, in Alexandria, Minnesota.

Northern immediately switched from a Lycoming to a 230-hp Continental 470L engine in the Cruisemaster. Several years later Downer Aircraft Industries bought controlling stock in Northern. Downer also owned the rights to the Republic Seabee, and planned to manufacture it alongside the Cruisemaster. It soon became evident that wood and metal do not mix on an aircraft production line, and Downer eventually sold the Seabee to finance development of the tricycle-gear, 260-hp Bellanca.

The company's fortunes rose, fell and rose again. Production was halted in 1962. A group of about 10 investors, led by James M. Miller and T. E. (Marge) Mitchell of Miller Flying Service, Incorporated, in Plainview, Texas, formed International Aircraft Manufacturing, Incorporated—Inter-Air—to lease the Alexandria facility until Downer was back on its financial feet. Production resumed, and when Downer had regained its health in 1966, Inter-Air and Downer merged to form the Bellanca Aircraft Corporation.

Bellanca acquired the Scout, Citabria and Decathlon from Champion Aircraft Corporation in Osceola, Wisconsin, in 1970, and attempted unsuccessfully to acquire Mooney and Aerostar from Butler Aviation a few years later. In 1976 Bellanca signed an agreement with the Anderson-Greenwood Aviation Corporation to manufacture and market the Aries T-250, a five-seat, 180-knot, aluminum, T-tail aircraft developed by Anderson-Greenwood. However, the cost of tooling up for T-250 production hit Bellanca just as high interest rates for consumer loans began to cut deeply into aircraft sales. After building just three T-250s in 1979, production was halted. Bellanca sold the Champion line and returned the rights to the T-250 to Anderson-Greenwood. In March 1980 the last of 14 Vikings built that year rolled out of the Alexandria factory and Bellanca closed its doors once again.

PHOTOGRAPH FROM THE COLLECTION OF AUGUST T. BELLANCA

Two years later the resilient Bellanca name was back in business. Bellanca, Incorporated, was formed by a group of stockholders, including Miller and Mitchell of Miller Flying Service, which has sold an estimated 75 percent of the Bellancas built in Alexandria. The company acquired the type certificates, rights, tooling and inventory of the Bellanca Aircraft Corporation. Initially, they planned only to manufacture spare parts but later decided that demand was sufficient to warrant limited production of the Super Viking. Miller Flying Service was given exclusive sales and distribution rights to new-production Vikings. Charles F. Holm, the former factory service manager, was named president of Bellanca, Incorporated, in Alexandria.

The wood craftsmen at Bellanca once again are combing through raw Washington-state Sitka spruce stock, selecting choice pieces for the Viking wing. Bellanca, Incorporated, is building its first new Super Viking since August 1985. The aircraft was scheduled to be flown to Miller Flying Service in October, where avionics are installed prior to customer delivery. The factory was starting production of three more pending confirmation of orders.

Between new aircraft production, the factory has subsisted on parts production and sales and repair and overhaul of customer aircraft. New Vikings are built to order, and the orders have been slow in coming.

Base price of a new Continental-powered 17-30A Super Viking is $91,000. Average equipped price, with S-Tec ST60-2 two-axis autopilot and King avionics, is about $127,000. The 1986 Super Viking is identical to the 1979 model.

Giuseppe Bellanca retired to a farm in Galena, Maryland, after traveling to Alexandria to see the first Cruisemaster built by Northern Aircraft. His former company, Bellanca Aircraft Corporation, attempted unsuccessfully to become a subcontractor to defense manufacturers and to develop and manufacture military targets and drones. The company eventually changed its name to Olson Brothers, Incorporated, and began agricultural operations in North Hollywood, California.

Bellanca lived comfortably on the farm, tending his garden and dabbling in aircraft design. He and his son, August T. Bellanca, an aeronautical engineer, often talked about designing a line of composite aircraft. In 1957 they formed Bellanca Aircraft Engineering, Incorporated, in Galena, but the elder Bellanca died in 1960 at age 74 before the composite aircraft project was begun. August Bellanca went on to design and build a prototype of the aircraft, which he called the Model 19-25 Skyrocket II. The six-place, 435-hp Skyrocket II is constructed of a sandwich of epoxy-impregnated fiberglass and aluminum honeycomb. In 1975 John P. Harris established five international speed records in the Skyrocket II prototype, including a record 326.50 mph (about 284 knots) over a 500 kilometer closed-circuit course. The prototype is kept at Summit Airpark in Middletown, Delaware, while August Bellanca actively seeks financing to certificate the design and put it into production. *—MRT*

BELLANCA VIKING

Bellanca 17-30A/31A
Super Viking 300A
Price new (1970-1979) $27,770-$56,900
Current market value $40,000 to $45,000

Specifications

Powerplant	Continental IO-520K 300 hp @ 2,850 rpm
Recommended TBO	1,700 hr
or	Lycoming IO-540-KIE5 300 hp @ 2,700 rpm
Recommended TBO	2,000 hr
Propeller	Hartzell, 3-blade, constant-speed
Length	26 ft 4 in
Height	7 ft 4 in
Wingspan	34 ft 2 in
Wing area	161.5 sq ft
Wing loading	20.59 lb/sq ft
Power loading	11.8 lb/hp
Seats	4
Cabin length	9 ft 8 in
Cabin width	40.5 in/rear seat 42 in
Cabin height	43.5 in
Gross weight	3,325 lb
Zero fuel weight	3,200 lb
Empty weight	2,200 lb
Useful load	1,125 lb
Payload w/full fuel	765 lb
Fuel capacity, std	360 lb usable 60 gal usable
Fuel capacity, opt	450 lb usable 75 gal usable
Oil capacity	12 qt
Baggage capacity	186 lb

Performance

Takeoff distance, ground roll	980 ft
Takeoff distance over 50-ft obst	1,420 ft
Max demonstrated crosswind component	17 kt
Rate of climb, sea level	1,200 fpm
Cruise speed/Endurance w/45-min rsv, std fuel (fuel consumption)	
@ 75% power, 7,500 ft	172 KTAS/ 3.2 hr (94.2 pph/15.7 gph)
@ 65% power, 10,000 ft	165 KTAS/3.6 hr (81 pph/13.5 gph)
Max operating altitude	24,000 ft
Service ceiling	18,200 ft
Landing distance over 50-ft obst	1,340 ft
Landing distance, ground roll	835 ft

Limiting and Recommended Airspeeds

Vx (best angle of climb)	65 KIAS
Vy (best rate of climb)	96 KIAS
Va (design maneuvering)	129 KIAS
Vfe (max flap extended)	102 KIAS
Vle (max gear extended)	125 KIAS
Vlo (max gear operating)	
Extend	122 KIAS
Retract	122 KIAS
Vno (max structural cruising)	167 KIAS
Vne (never exceed)	196 KIAS
Vs1 (stall clean)	66 KIAS
Vso (stall in landing configuration)	57 KIAS

All specifications are based on manufacturer's calculations. All performance figures are based on standard day, standard atmosphere, at sea level and gross weight, unless otherwise noted.